

## **Historic, Archive Document**

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# 251 Eggs in 12 Months from 1 Hen

Do you know that in the next seven years the people of the city of New York alone will consume nearly a million eggs per month?

Do you know that fowls return over four hundred per cent of their value each year—a greater interest on the investment than that from any other department of animal industry?

Do you know that the poultry and egg sales of the census year would have paid the entire cost of the army and navy, and left thirty-four million dollars over, or that it would have paid the whole pension bill and left a surplus of eighty-seven million dollars?

Do you know that the egg and poultry earnings of the United States for one year amounted to \$280,000,000, whereas the total of the gold, silver, wool and sheep produced in this country the same year was only \$272,434,315; the sugar production was but \$20,000,000; the wheat crop (that used at home) only \$229,000,000; the oat crop only \$78,984,900; and the corn crop only \$259,161,640?

These figures give you some idea of the extent of the poultry and egg business, of the country and the demand for the product. Yet the possibilities of the business have never been even approached because of the inability to obtain a satisfactory or profitable number of eggs from each hen.

## The Real Secret of Poultry Success Now Disclosed

The most perplexing problem that has confronted poultrymen for generations has been how to obtain a satisfactory or profitable number of eggs from each hen kept. **This problem has now been solved.** As the result of years of scientific research and extensive practical experiments, Mr. L. F. Van Orsdale has succeeded in accomplishing phenomenal results in securing high average egg records from large flocks.

### 251 Eggs in 12 Months From One Hen

Mr. Van Orsdale has placed the results of his work in a book entitled: "How to Build Up a Heavy Laying Strain." In this book he describes clearly and fully the methods he followed which resulted in his obtaining 251 eggs in twelve months from one hen, which is the **the world's greatest egg record**, and a number which would have been considered impossible a few years ago.

Mr. Van Orsdale's book will revolutionize the Egg industry. Mr. A. M. Lafayette, D. D.S., a noted authority, says: "I consider this book contains more good points (with poor ones conspicuously absent) than any other on the subject of egg production that I have read. The development of a heavy and persistent laying strain of fowls from good stock is **merely a matter of carefully following the advice therein.**"

## Make Dollars Where You Now Make Cents

If you keep hens for eggs, you can't afford to go another day without a copy of this book. It will show you how to make dollars where you now make cents. The information given is rational and up to the minute, shedding light on vital points pertaining to egg-making that have previously remained dormant, and proving conclusively that the development of a heavy and persistent laying strain of fowls, of all breeds, and in all climates, is merely a matter of carefully following the advice contained therein. It is unquestionably the most valuable book ever published.

**SPECIAL OFFER** For a limited time we will make the following special offer. Send us one dollar, and we will send you, postpaid, a copy of "How to Build Up a Heavy Laying Strain," a year's subscription to "Poultry Monthly" and a year's subscription to the "Spare Moments" Magazine. Address

LEONARD DARBYSHIRE, INC., Dept. 22

ROCHESTER, N. Y.

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The above is a life-like photograph of the hen that laid 251 Eggs (actual count) in one year.

### You Can Do as Well

The principles and rules laid down in Mr. Van Orsdale's book can be easily followed by anyone. It gives information in detail on every subject relating to egg production; tells how to select the laying hens; how to mate, care and breed for heavy layers; how to eliminate the drones and save time, labor and expense; describes the trap nest and its value with three illustrations of three leading makes; tells how and what to feed; how to prepare balance rations; in fact each chapter is complete in every detail, and will prove priceless in value to those who wish to increase the egg yield of their flocks. The book is handsomely illustrated from cover to cover, containing photographic illustrations of heavy laying birds, modern houses, runs, appliances, etc., that are in keeping with the instruction set forth.

## WHAT GLEANINGS HAS TO OFFER FOR THE BENEFIT OF BEGINNERS

To accommodate the large number who are just beginning to take up the subject of bee-keeping, and who have not yet mastered the details of the business, the publishers of *GLEANINGS IN BEE CULTURE* have decided for the year 1909 to use a large proportion of the available space for the discussions of beginners' problems. Almost every one becoming interested in bees is confused by the strange terms and by the apparent endless number of complicated plans described and recommended by the experts. In order to overcome this difficulty some of the best writers have been engaged to furnish a series of articles dealing with the elementary side of some of these problems.

Mr. E. D. Townsend, of Remus, Mich., a bee-keeper who has not only made a success himself in the business, but is able to teach others, has written the best series of articles that we have ever seen on the subject of "Practical Instructions for Beginners." The first of these articles appeared in our March 15th issue. This article gives a full discussion of tools for bee-keepers, how many colonies to start with, how to buy bees, when to start, etc. All pronounce this a very interesting and valuable contribution, and it is entirely practical as the heading implies. There will be one of these articles by Mr. Townsend in every issue for some time to come, and we are sure that nothing has ever been written that has proven of so much interest, especially to beginners, as the articles in this series. The reader is led to the very bottom of the ladder, and every step upward toward success is clearly pointed out and explained in a most masterful manner. Mr. Townsend has had a long experience; and since he has made a great many mistakes, his suggestions prevent any one from making the same mistakes again.

Besides the series of articles by Mr. Townsend, referred to above, a great many beginners have sent us their experiences during the first one or two years, and these articles also, as can be imagined, make very interesting reading. *The best warning comes from those who have made mistakes*, and we are sure that no beginner can afford to miss these reports of some of the more common blunders in bee keeping.

### SECURING A BETTER PRICE FOR HONEY

SELLING 20,000 LBS. OF EXTRACTED HONEY AT THREE CENTS PER LB. ABOVE THE MARKET PRICE.

We count ourselves fortunate in securing for *GLEANINGS IN BEE CULTURE* an article from W. Z. Hutchinson, a prominent honey-producer, giving a detailed account of the methods by which he has accomplished the result above indicated. This article is one of the most important that we have been able to give to the readers of *GLEANINGS* in years, and is exceptionally valuable, for its methods and recommendations are applicable to large and small producers of either comb or extracted honey, and there is scarcely a reader of *GLEANINGS* who will not be both interested and profited by it.

The article is intensely practical. There are no intricate methods described. There are no plans which can not be carried out by any bee-keeper, and we do not hesitate to say that a careful following of these methods will bring to the readers of *GLEANINGS IN BEE CULTURE*

THOUSANDS OF DOLLARS

The writer, already well known to our readers, outlines his work as follows:

- (1) Finding the right customers, the first step.
- (2) Importance of the right kind of advertising.
- (3) Getting pay for samples.
- (4) Education of new customers.
- (5) Description of the circulars used.
- (6) Larger profits in following this method.
- (7) Opportunities for other bee-keepers.

In addition to the carefully worded description, very plain and simple, however, the article will be fully illustrated by many choice half-tones and other engravings. This article will appear probably in the July 1st or 15th issue, and subscriptions should be sent in at once to secure the number containing this article.

### ANSWERING QUESTIONS BY MAIL

We realize that it is almost impossible to publish answers to every question, for in a great measure we would be obliged to tell the same story over and over again. We answer a large number of inquiries by letter, however, and we always invite this correspondence. Any subscriber to *GLEANINGS IN BEE CULTURE* who does not find on its pages the answers to the particular questions which he has in mind, can always get a full and complete answer by sending us the question. We have a large number of printed circulars, etc., giving answers to many questions, and if these do not fit the case we send a complete answer by letter; or, if we have not the information necessary we send the question on to some one who has, so that in this way we guarantee a good answer to almost every reasonable question. We also have a correspondence course for bee-keepers in which an opportunity is provided for a systematic series of questions and answers. Write us for further particulars.

Subscribe for *GLEANINGS* and avoid making mistakes that have been made by thousands before you. Why not take advantage of this opportunity?

**DO IT NOW.** For 25 cts. in stamps we will place your name on our subscription list for six months on trial. You will thus receive twelve copies of our journal, and you will also have the privilege of asking such questions as you choose. Regular price \$1.00 per year.

**THE A. I. ROOT COMPANY, MEDINA, OHIO.**

The A. I. Root Company, Medina, O.  
 For the enclosed 25 cts. please send *GLEANINGS* (6 mo.) to my address  
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## Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

ST. PAUL.—Fancy white clover and basswood, new, 13 to 14; buckwheat, 10 to 12½; strained, in 60-lb. cans, per lb., 7 to 8.  
St. Paul Board of Trade, April 5.

BOSTON.—We quote fancy white comb honey, 15; No. 1 ditto, 14; light extracted, 9; light amber, 7½; amber, 6½. Beeswax, 30.  
BLAKE-LEE CO.,  
April 6. 4 Chatham Row, Boston, Mass.

COLUMBUS.—The market is very dull, and unchanged in prices from last quotations. Holders of honey are trying to clean up, and are not advising shipments at present.

EVANS & TURNER,  
Columbus, O.

CINCINNATI.—The market on comb honey here is bare of a fancy article. There is considerable off-grade honey now on the market, but no demand. Extracted honey is fair, white sage in 9 in 60-lb. cans; amber, in barrels, 6 to 6½. Beeswax is moving fair at \$33.00 per 100 lbs.  
C. H. W. WEBER,  
March 29. Cincinnati, O.

CHICAGO.—The demand for honey is not sufficient to absorb the offering, and especially is this true of comb, which is being forced on the trade so that fancy grades can be bought at 12 to 13; off grades, 2 to 3 cts. less; extracted fancy white, basswood and clover, 8; off in any particular, 7 to 7½; amber grades, 6 to 6½. Beeswax is active at 30.  
R. A. BURNETT CO.,  
April 3. Chicago, Ill.

CINCINNATI.—The demand for extracted honey is rather slow, although we are getting from 7½ to 9 for clover honey in 60-lb. cans according to quality and quantity. Amber honey in barrels, 6 to 7½, according to quality and quantity. Comb honey is moving off quite lively, and we could use a few hundred cases before the season is over, at from 12 to 12½, delivered here for fancy and No. 1. For beeswax we are paying 29 in cash and 31 in trade for good to choice yellow.

THE FRED W. MUTH CO.,  
April 7. Cincinnati, O.

DENVER.—We quote our local market, No. 1 white comb honey, strictly fancy stock, per case of 24 sections, \$3.25; No. 1 light amber, case, \$3.00; No. 2, \$2.75. Partly grafted comb sells from \$2.40 per case down, according to its condition. Extracted white sells at 8½ to 9 cts. per lb.; light amber, 7½ to 8; strained amber, 6½ to 7. Our market is overstocked, and in all probability some honey will be carried over. We pay 25 cts. for average yellow beeswax delivered here.

THE COLORADO HONEY-PRODUCERS' ASSO'N,  
March 31. Denver.

LIVERPOOL.—Only small sales have been taking place lately. Honolulu white has been sold at 6½ cents; also Haitian at the same price; Chilian, 4¼ to 6½; Peruvian, 4 to 5; California, 8¼ to 10½; Jamaican, 4½ to 6½. Beeswax, Sierra Leone, 29½; African, 29 to 30; American, 30½ to 34; East India, 29½; Chilian, 30½ to 37.  
TAYLOR & CO.,  
March 22. 7 Tithebarn St., Liverpool.

BUFFALO.—Our honey market is in a very slow and draggy condition with no better prospect near at hand. There is no large supply in the market, and we keep selling a little at cut prices. No. 1 to fancy white comb, 12 to 14; No. 2 ditto, 8 to 10; extracted, white, 7½ to 8; amber and dark, 6 to 7; in tumblers, per dozen, 85 to 90. Beeswax, 25 to 30.

W. C. TOWNSEND,  
April 7. Buffalo, N. Y.

KANSAS CITY.—We have nothing new to report on the condition of the honey market, except that we are having a little better demand for both comb and extracted. We quote No. 1 white comb, 24 sections, \$2.65 per case; No. 2 white and amber, 24 sections, \$2.25 to \$2.40; extracted white, per lb., 7 to 7½; extracted amber, per lb., 6 to 6½. Beeswax, 25 to 28.

C. C. CLEMONS PRODUCE CO.,  
April 5. Kansas City, Mo.

ZANESVILLE.—The demand for comb honey continues light. Some honey is being offered, but the demand is so slack that indications are that honey now being held by producers will have to be disposed of at some sacrifice. No. 1 to fancy white-clover comb should bring on arrival about 13½; best extracted, 7½ to 8. In a wholesale way No. 1 to fancy comb honey brings 15 to 16. For good clean beeswax I offer 30 cents in cash or 32 in exchange for bee-supplies.

EDMUND W. PEIRCE,  
April 5. Zanesville, O.

INDIANAPOLIS.—There is a very favorable demand for best grades of both comb and extracted honey; and while jobbing houses are fairly well stocked, very little honey is now being offered by producers. I note some arrivals of fancy comb at 12½; No. 1 white, 12; white-clover extracted, in five-gallon cans, 7. Some amber honey is being offered, but the demand is so slight that the prices are irregular. Beeswax is steady at 29 cents cash or 31 in exchange for merchandise.

WALTER S. POWDER, Indianapolis.

NEW YORK.—There is nothing doing in comb honey. There is some demand for No. 1 and fancy white, but not to any great extent. Off grades are not wanted. Before shipping we would advise bee-keepers to correspond with us. The demand for extracted has been increasing of late, and we are looking for a still better demand during the spring and summer. The market is not overstocked, but sufficient quantities arrive to meet demands. Prices are ruling about the same as in the last quotations. Beeswax is steady at 29 to 30.

HILDRETH & SEGELKEN,  
April 7. New York.

ST. LOUIS.—Since our last, of March 11, there has been nothing new to report in regard to our honey market. Trade is very slow. We quote fancy comb honey, 13 to 14; choice amber, 12 to 13; dark amber, 10 to 11. Broken or leaking honey sells at much less. There is no choice white comb honey arriving of late. The small receipts consist of inferior dark or light weights. Extracted amber honey in five-gallon cans is quotable at 6 to 6½; in barrels, 5½ to 6. Beeswax, choice pure, 30; all inferior and impure, less.

R. HARTMANN PRODUCER CO.,  
March 27. St. Louis, Mo.

# BEE SUCCESSFUL

Fit out your apiary with **Muth Special Dovetailed Hives**. They are made with warp-proof covers and warp-proof bottom-boards. Besides, each hive has a honey-board into which may be placed a Porter bee-escape, thus enabling the bee-keeper to *take off honey without a sting*. Good bee-keepers use them exclusively. They are sold at the same price as the regular styles of dovetailed hives. Send for our catalog to-day. 'Tis free.

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We have a new stock of goods on hand for 1909 and are  
able to fill your orders, *without delay*, at factory prices.

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quote you our best prices.

**DO IT NOW** and secure our **Special Early-order Discounts.**  
**If you care** to save on freight charges, send your orders to us.  
No charges for drayage.

## C. H. W. WEBER

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CINCINNATI, OHIO

NOTICE.—On account of the death of my father, Mr. C. H. W. Weber, it is necessary to make it understood that the business  
will be conducted the same as usual; there will be no change whatever. Soliciting your patronage, I am

Yours truly, CHAS. H. WEBER.

# GLEANINGS IN BEE CULTURE

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# BEES FOR SALE

I have 100 colonies of bees here at Flint, and there are reasons why I prefer to begin the season with a smaller number.

At some of our Northern Michigan Apiaries the fire last fall totally destroyed the pasturage.

For these reasons I wish to sell some bees. They are mostly in ten-frame Langstroth hives, although a few are in eight-frame hives. The hives are all new, made of soft white pine, and painted with two coats of white paint. Nearly all of the combs are built from wired foundation. The bees are all pure Italians, and mostly of the Superior stock, or Moore strain. Every thing is strictly first class—could not be better.

Prices for ten-frame colonies are as follows: Less than five colonies, \$7.00 per colony; five colonies or more, but less than ten, \$6.50 per colony; ten or more colonies, \$6.00 each.

Eight-frame colonies: Less than five, \$6.00 each; five colonies or more, but less than ten, \$5.50 each; ten or more colonies, \$5.00 each. This is the first time I have made any lower prices on large orders.

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W. Z. HUTCHINSON, Flint, Mich.

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Providence, R. I.



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Devoted to Bees, Honey, and Home Interests

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Circulation 35,000

72 pages Semi-monthly

A. L. BOYDEN, Advertising Manager

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Preferred position, inside cover, 50 per cent additional.

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Reading notices, 50 per cent additional.

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Nice weather during the last half of April means an unusual rush for bee-supplies. Better send your order now for the goods **you** need.

**Ours** are all "Root Quality" and a big stock to draw from. Our catalog for the asking.

Beeswax wanted.

## M. H. Hunt & Son Lansing, Mich.

Opp. Lake Shore depot.

## Bee Supplies

Our new stock has arrived; all orders are shipped promptly.

Do you know, Mr. Bee Man, that our business increases each year from 25 to 50 per cent?

Why? Because we are saving our customers money in freight.

Why not allow us to save for you? Send us your orders and try us.

### Satisfaction Guaranteed.

Honey in cans or barrels, also beeswax, wanted in exchange for supplies. Write us what you have to offer, and let us tell you what we can do.

No cartage on Honey or Beeswax in or Supplies out.

*Free catalog for the asking.*

**The Griggs Bros. Co.,**  
Toledo, Ohio.

## How to Keep Bees

By Anna Botsford Carrick

THE A. I. ROOT COMPANY, MEDINA, OHIO

Among all our American books on bees this is the one most highly recommended for beginners in bee-keeping. It was written by a gifted bee-keeper for amateurs. It is all its name implies. Price \$1.10 postpaid.

## PATENTS 25 YEARS' PRACTICE.

CHARLES J. WILLIAMSON,  
Second Nat'l Bank Bldg., WASHINGTON, D. C.

Patent Practice in Patent  
Office and Courts.

Patent Counsel of  
The A. I. Root Co.

## MILLER AUTOMATIC DECAPPERS

The only machines for decapping  
honey-combs.

For all frames and sections. \$5 to \$35.

**Apicultural Manufacturing Co.**  
Providence, R. I.

WESTERN PENNSYLVANIA, WEST VIRGINIA,  
and EASTERN OHIO

## BEE-KEEPERS

You can get any thing you want for bees, at

**STAPLER'S SEED STORE**

412-414 Ferry St., PITTSBURG, PA.

Agents for Root's goods.

## DOOLITTLE & CLARK

Have just taken from their bee-cellars some of the finest Italian breeders ever seen. Prices, \$2.50, \$5.00, and \$10.00. Ready for delivery May 1.

**BORODINO, ONONDAGA CO., N. Y.**

Our office, warehouse, and bee-yards are now all at the one address. We are better fitted to serve you than ever.

**Black Diamond Bees,  
Black Diamond Brand Honey,  
and Root's Bee-supplies**  
are our stock in trade.

Remember the address. Write, phone, or call.

**GEO. S. GRAFFAM & BRO., 105 Third St., Bangor, Maine**

## Queens by return mail.

Do You Need Any?

Queens bred for business from our well-known strain of three-band Italians, unexcelled as honey-gatherers. **Tested, \$1 each; untested, 75c; \$8 doz.** Safe arrival and satisfaction guaranteed. Send for price list.

**J. W. K. SHAW & CO., Loreauville, La., Iberia Pa.**

# New Goods for 1909



## Good News for the Southwestern Bee-keeper

The strenuous season of 1908 left our stock of bee-supplies in a depleted condition. We have now replenished our stock with large shipments of the finest bee-goods ever seen in the Southwest. These are

### Root's Goods Exclusively

We have not dared to experiment with any other line of bee-supplies; and from the looks of our new goods we shall never need to. They are "as fine as silk." We should be glad if our customers would come and see them. You will be pleased with the best ever. Come along and enjoy a day in San Antonio, picking out what you want while your wife goes shopping. Seeing is believing, and we would far rather hear you puff our goods than do it ourselves. But we honestly believe we have not only the largest line of bee-supplies in Texas, but also, by far, the best in quality.

### Shipping-cases for Comb Honey.

500	12	4	3 and 2 in. glass.	350	6 1/4	3	2 and 3 in glass.
350	10	4	2-in.	550	7 1/8	4	3-in.
200	12	2	2-in.	250	7 1/8	3	3-in.
200	16	2	2-in.	300	9 1/4	4	3-in.
250	8	3	2-in.	50	9 1/4	3	3-in.

If you can use any of the cases in the foregoing list we will quote very attractive prices to clean them up. Please write at once if you want any.

Early-order discount—1 per cent for March.

### Beeswax Wanted.

We are in fine shape to use large supplies of beeswax. Bee-keepers in Texas, Mexico, New Mexico, Arizona, Oklahoma, and Louisiana should bear this in mind. In our foundation department we have a force of expert workmen who thoroughly understand their work. In working the beeswax they are careful to retain the original fragrant odor of the hive. It takes skill and care to do this, but we do it. If you desire *your* beeswax worked up in this way send it here. We buy wax outright for cash, and we also do considerable trading for bee-supplies.

## Toepperwein & Mayfield

1322 South Flores St.

San Antonio, Texas

Write to us  
your wants.

Catalog  
free.



# COMB FOUNDATION and SECTIONS

## 'Falcon' brand

The name of our famous line of bee-keepers' supplies which for nearly thirty years has been noted for that fine workmanship and material which have forced others to make a better grade of goods. **NONE ARE OUR EQUALS YET!**

Our workmen, who have learned the making of our brand of bee-goods, are still with us, and our customers are assured of that high grade of excellence which we have maintained in the past.

## Our Foundation

"Falcon" foundation has won a reputation on account of its perfect manufacture, its cleanness, toughness, and the readiness with which bees accept it. No acid or other injurious substances which destroy the "life" of foundation are used in our special process. We clarify the best grades of pure beeswax, and by our process of sheeting subject it to enormous pressure until it finally passes through perfect foundation-mills, and is cut, papered, and boxed, ready for shipment. **SAMPLE FREE.** Every pound equal to samples. Write for prices. Highest price, cash or trade, paid for Beeswax.

## Sections

We were the first to produce a polished section, and we have yet to see any sections equal to ours. Our special machines for sanding and polishing sections give bright, smooth, polished sections which can not be equaled. We use only selected basswood, the white part of the timber only being used. We furnish all styles of sections and supers for the same at one uniform price for beeway and one for plain. Write for prices and our catalog of supplies.

## Air-spaced Hives

For northern localities there is no better hive for out-of-door wintering than the air-spaced, and it is just as convenient for summer management. An air space is the least conductor of sudden changes in temperature, and our Air-spaced Hives have given perfect satisfaction in the hands of practical bee-keepers in the North everywhere. The air-chamber may be filled with chaff if one desires. The same frames, supers, covers, and other fixtures are used as with the Dovetailed hives.

### PRICE OF AIR-SPACED HIVES

8-frame, 1½-story, complete for comb honey, in flat,	1, \$2 80; 5, \$12.50
10- " " 1½- " " " " " " " "	1, 2.85; 5, 13.25

Air-spaced hives are cheaper than chaff-packed hives or than Dovetailed hives with winter cases, and are much less trouble, as bees do not have to be packed in fall and unpacked in spring.

We have on press a booklet for beginners, "Simplified Bee-keeping," and a circular of Beginners' Outfits. These give complete instructions for the beginner, and we shall be pleased to place on our list the names of all who request them; and as soon as printed, copies will be mailed free.

# W. T. FALCONER MFG. CO., Jamestown, N. Y.

J. E. HAND will begin the season of 1909 with improved facilities for rearing the

# CHOICEST QUEENS

He has developed a system of queen-rearing that contains all the best points of other methods with none of the defects, including some *valuable improvements* of his own—in short, a system through which the highest queen development is reached by *correct and scientific* principles, which means that he is now in position to offer to the bee-keeping public a *higher grade of queens than is usually offered in the common utility classes*, owing to scientific methods which produce queens of a higher development than can be reared by the ordinary methods in vogue, and also to an *improved method of classifying queens* which strikes the word *select* from our list, and gives a *square deal to all*. No selects means no culls, and the highest grade of queens in the untested and tested classes. These queens will be reared from a superior strain of hardy northern-bred red-clover Italians, "the very best," and will be safely delivered to any address in the United States, Cuba, Canada, or Mexico, at the following prices: Untested, \$1.25; 3, \$3.00; warranted, \$1.50; 3, \$4.00; tested, \$2.00; 3, \$5.00. Book orders now, send money when queens are wanted. Valuable information free. Send for it to-day.

**J. E. HAND, BIRMINGHAM, OHIO, ERIE CO.**

## Queens for Business, As well as Handsome.

BRED BY A SPECIALIST

**F. J. WARDELL, Uhrichsville, O.**

Here is the kind of testimonials I get from customers:

Linfield, Pa., Sept. 11, 1908.

MR. F. J. WARDELL, Uhrichsville, O.

Dear Sir:—Enclosed please find my check for \$2.00, for which please forward me by return mail two more of those queens like the last two I got from you. One of them has every frame filled with eggs except the two outside ones, which is filled with honey. I got queens from another party in the fore part of August, and not one of them has equalled yours in egg production so far. H. FRY.

I can please *you* as well as Mr. Fry. My strain is the original red-clover long-tongued Italians, with three bands. They are hustlers, and handsome too. Nothing but high-grade stock sent out. I have no poor stock to sell. Should you require a very high-grade breeding queen I generally have a few in stock.

Please send for my circular.

	April and May.	June to Oct.
Untested.....	\$1.25	\$1.00
Select untested.....	1.50	1.25
Tested.....	2.50	2.00
Select tested.....	3.50	3.00
Breeding queens.....	5.00	3.50
Select breeding queens.....	9.00	7.50
Extra-select breeding queens.....	12.00	10.00

Please send for my circular. My address is

**F. J. WARDELL, . UHRICHSVILLE, OHIO**

## ITALIAN QUEENS

Good leather-colored queens bred for business—no disease; prompt shipment, extra good stock. June, 90c; six for \$1.75; 20 or more at 60c each; later less. Satisfaction, or money back.

**S. F. TREGO, . . SWEDONA, ILL.**

## PHARR'S GOLDENS

took first prize at three exhibits in 1907. We also breed Carniolans, three-banded Italians, and Caucasians, bred in separate yards and from the best breeders obtainable; guarantee safe delivery and fair treatment. Untested, \$1; tested, \$1.25. Address New Century Queen-rearing Co., Bercair, Tex. John W. Pharr, Prop

## Golden <sup>5-band and 3-band</sup> Red-clover Italian Queens

My queens are large and prolific. Their workers are hardy and good honey-gatherers. Give them a trial. Untested, one, \$1.00; six, \$5.00. Select untested, one, \$1.25; six, \$6.50. Select tested, \$2.00 each. I am booking orders now to be filled in rotation after May 25.

No nuclei or colonies for sale this season

**WM. A. SHUFF, 4426 Osage Ave., Phila., Pa.**

## Carniolan, Banat, and Caucasian Queens

Imported, \$5.00 each; homebred, \$1.00 each, five for \$4.00. Best strains from apiaries personally inspected by

**FRANK BENTON, box 17, Washington, D. C.**

## Golden Italian <sup>\$1</sup> QUEENS

Same old stand and stock. Ready now.

**J. B. CASE, . PORT ORANGE, FLA.**

## Not Cheap Queens, but Queens Cheap

DON'T BUY QUEENS UNTIL YOU SEE MY

**FREE OFFER**

Red-clover three-band queens as follows: Untested, 1, 75c; 6, \$4.20; tested, 1, \$1.00; 6, \$5.70; select breeder, \$5.00. Nuclei with untested queen, one frame, \$1.75; two frame, \$2.25; with tested queen, one frame, \$2.00; two frame, \$2.50.

Five-band or golden queens as follows: Untested, 1, \$1.00; 6, \$5.70; tested, 1, \$1.50; 6, \$8.70. Breeders, 1, \$10.00.

If queens are wanted in large quantity, write for prices. Directions for building up weak colonies, 10 cts.

**W. J. LITTLEFIELD, LITTLE ROCK, ARK., RT. 3.**

## CALIFORNIA

Bee-keepers who are looking for highest quality of bees should try our strain of Italians, a proven race in all qualities; ideal for all conditions.

LEATHER-COLORED AND GOLDEN ITALIANS.

Untested, each, \$1.00; six, \$5.00; doz., \$9.00.

Tested, \$2.00. Breeders, \$5.00 and up.

Satisfaction, or money back.

**C. A. WURTH, . . VENTURA, CAL.**



# QUEENS

and bees. Nothing but Italians; an improved superior strain is what **Quirin-the-Queen-Breeder** raises. Stock is northern bred and hardy. A year ago we wintered our five yards on summer stands without a single loss; so far this winter we have lost but three colonies (due to mice and a bad entrance). A party in the West writes that he is one of the largest honey-producers of his State, and says that his success is largely due to our stock, and asks for prices on 1000 queens. Some of the largest yields reported can be traced to our stock. Over 20 years a breeder. Remember, queen-rearing is not a side issue with us, but it's our only business, and on a large scale.

## FREE CIRCULAR AND TESTIMONIALS.

PRICES OF QUEENS BEFORE JULY.	1	6	12
Select queens . . . . .	\$1 00	\$5 00	\$ 9 00
Tested queens . . . . .	1 50	8 00	15 00
Select tested queens . . . . .	2 00	10 00	18 00
Breeders . . . . .	4 00		
Golden five-band breeders . . . . .	6 00		
Two-comb nuclei, no queen . . . . .	2 50	14 00	25 00
Three-comb nuclei, no queen . . . . .	3 50	20 00	35 00
Full colonies on eight frames . . . . .	6 00	30 00	

Untested queens in April will be mailed from the South.

Add the price of whatever grade of queen is wanted, with nuclei or colonies; nuclei ready about May 1st to 10th; can furnish bees on Danzenbaker or L. frames; pure mating and safe arrival guaranteed. We employ 400 to 500 swarms in queen-rearing, and expect to keep 500 to 1000 queens on hand ready to mail. Our Northern-bred bees are hardy, yet gentle; they will give you results. Address all orders to

## QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio

### CALIFORNIA

For season of 1909 I offer to the trade the highest quality of pure-bred leather-colored and golden Italian queens.

Untested, \$1.00 each; six, \$5.00.

Tested, \$2.00 each; six, 10.00.

Prices quoted on breeders and quantity lots.  
Send for circular.

L. E. MERCER, Ventura, Cal.



## Queens

Hardy  
Golden  
Queens

These are my specialty. Untested, \$1.00 each; six, \$5.00; doz., \$9.00. Tested, \$1.50 each; six, \$8.00; doz., \$15.00.

DANIEL WURTH, N. Leverett St., Fayetteville, Ark.

## Taylor's Queens for 1909

J. W. Taylor & Son have made a specialty of breeding for the best honey-gatherers. Our three-banded Italians can't be beat, or haven't been, as honey-gatherers. Untested, \$1.00 each, or \$9.00 a dozen; tested queens, \$1.25 each, or \$12.00 a dozen. Select tested queens, \$1.50 each; breeders, the very best, \$3.00 to \$5.00 each. Send all orders to

J. W. TAYLOR & SON, BEEVILLE, BEE COUNTY, TEXAS

### W. H. Laws

is again on hand with his famous stock of bees and queens for the season of 1909. Fine well-bred queens are his specialty; and in all the queens mailed during the past 18 years there is not a displeased customer that I know of. On the other hand, letters of praise come from every source. Mr. Wm. Hughes, of Washington, D. C., writes that he has been handling queens for the past twenty years, and he has never found any that equal or please him so well as the two dozen he bought of me last season. I can and do mail queens every month in the year, California and Cuba taking over 100 in the past month of December. I will mail queens from now on at the one price of \$1.00 each or 6 for \$5.00. Breeding queens, each, \$5.00. Write for prices on quantity lots. Address **W. H. LAWS, Beeville, Bee County, Texas.**

### Westwood Red-clover Queens

A New York customer writes, "I have tried queens from a good many breeders, but yours are far ahead of them all." Nuclei and full colonies a specialty. Price list on application. **HENRY SHAFFER, 2860 Harrison Ave., Sta. L, Cincinnati, O.**



### Queens of High Quality

Beautiful Goldens and Superior Red-clover Italians

Bred for Business

We are fortunate in securing the services of a queen specialist of national reputation, who will have charge of our queen-rearing department. Our queens will be bred by the most up-to-date methods from the very best stock obtainable. One thousand colonies back of our business will enable us to furnish queens in large or small quantities by return mail.

Either three-banded Italians or goldens by return mail.

Select untested . . . one, \$1.00 six, \$5.50 doz., \$9.00  
Tested . . . . . 1.50 " 8.00 " 11.50  
Select tested . . . . . 2.00 " 9.00 " 16.00  
Breeders, \$3.00 to \$5.00. Straight golden breeders, \$10.00

DESCRIPTIVE CIRCULAR FREE.

### SIRES BROTHERS & CO.

Yakima Apiaries 516 North 8th St., North Yakima, Wash.



## NEW ENGLAND BEE-KEEPERS

We are  
headquarters for

### Bee-supplies.

We have a large stock of hives, supers, sections, and foundation on hand, and can supply your wants promptly. The bee-keepers who had their supers ready for the honey-flow last season, secured a good harvest. Send in your orders early and have goods shipped by freight. Price list free.

### Bees and Queens.

**W.W.CARY & SON**  
LYONSVILLE, MASS.

## Field and Garden Seeds Bee and Poultry Supplies

The best quality bee-supplies. None better to be had. Now is the time to send in orders, and be ready for the rush season.

All kinds of Garden and Field Seeds. Choice sweet-clover seed always in stock. A large variety of best seeds for the South.

Bee-keepers and gardeners who also raise poultry will be interested in our large stock of poultry-supplies, the largest and most complete line in the South. . . . .

Catalogs of all of the above lines on request. Send now, and get your orders in early. .



**Texas Seed and Floral Company**  
Dallas, Texas

## Bee Supplies

for the Southern  
States.

WE are better prepared than ever before to take prompt care of all orders. We sell goods at factory prices and aim to keep our stocks well assorted. Write us for estimates on your list, or send the order right along and we will guarantee that you will be satisfied. We handle none but the best goods. Golden bees and queens a specialty. Send in your orders now and be sure of early delivery.

Root's goods exclusively.

**HOWKINS & RUSH**  
241 Bull St. SAVANNAH, GA.

## For 25 Years

I have supplied Southern Beekeepers  
with

## HIVES and SUPPLIES

and have given satisfaction.

**Root's Goods Exclusively.**

Prompt and accurate service.  
Catalog mailed free.

**J. M. JENKINS**  
WETUMPKA, ALABAMA

## THEY ARE HERE.

The Best and Largest Stock of Root's Goods  
Ever in Western Michigan.

As I was able to clear up my stock closely last season, every thing is new. Danz. and all Dovetailed hives with the  $\frac{3}{8}$  bottom-boards. Shipping-cases with the corrugated paper. The newest design of extractors. In fact, every thing fresh from the factory, and of latest design.

SEND ME A LIST OF YOUR WANTS  
AND LET ME MAKE YOU FIGURES

The goods are here, my time is yours,  
and I want to serve you.

I can still take a few more orders for my strain of bees and nuclei. See ad. in back numbers. And I want beeswax, for which I will pay cash or 3c above cash prices in exchange for goods. Send for my 1909 catalog (48 pages), free.

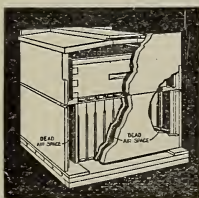
**GEORGE E. HILTON**  
FREMONT, MICH.

**I. J. STRINGHAM**  
105 PARK PL.

## New York City

furnishes bees, and every kind of material bee-keepers use.  
1909 catalog ready. Liberal discount on early orders.

**Apiaries: . Glen Cove, L. I.**



## Protection Hive.

The best and lowest-price double-wall hive on the market. It will pay to investigate. 1909 catalog now ready. Send for one and let us figure on your wants. Beeswax wanted.

**A. G. WOODMAN CO., . Grand Rapids, Mich.**

## IMPROVED DAN-ZE GUARANTEED 'ALL RIGHT'

GOLD MEDALS

St. Louis - 1904  
Jamestown - 1907



IS THE BEST,  
STRONGEST,  
COOLEST,  
CLEANEST,  
CHEAPEST,  
and LARGEST  
SMOKER SOLD  
FOR A DOLLAR.

With the side grate combines hot and cold blast deflecting part of the air back and over the fuel: **COOLS** as it **expels** the smoke, while part fans the side and bottom till all consumed. **The Double-walled** case,  $3\frac{1}{2}$  inches in diameter, has asbestos-lined sides and bottom, keeping all cool.

The projecting hinge-strap protects the smoke exit, and renders easy opening the one-piece cap.

**THE VALVELESS** metal-bound bellows combines simplicity, utility, and durability.

Five years increasing sales justify us in extending our **GUARANTEE OF PERSONAL RESPONSIBILITY** for full satisfaction or **REFUND** of price on all our smokers sold by **US OR OTHERS**.

Price \$1.00; two, \$1.60; mail, 25c each extra. **DAN-ZE HIVES** with metal Propolis-proof Guards.

**ROOT'S** Goods at **Root's** prices, early-order discounts. Write us for **any thing** you need. Free circulars for yourself and your friends.

If you want a home in this genial Sunny South Land, we will help you find it.

**F. Danzenbaker, Norfolk, Va., or Medina, Ohio**

**Yellow and White Sweet-clover Seed for Sale**

Yellow blooms three or four weeks earlier than white. One of the best bee-foods to be found.

**W. B. WALLIN, Brooksville, Ky.**

Oldest Bee-paper in America

## This Coupon Worth 35 cents

(New Subscribers Only)

Name .....

Postoffice .....

State .....

cents (stamps or coin) together with this coupon, we will send you a trial trip of our Journal for 12 months. Order now and let us begin with this month's fine number. Address,

**American Bee Journal, 118 West Jackson, Chicago, Illinois**

If not now a subscriber and you want one of the most helpful aids to successful bee-culture—a paper that tells how to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keepers. Best writers.

### AMERICAN BEE JOURNAL

A 32-page illustrated 75-cent monthly. It tells all about the best way to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keepers. Best writers.

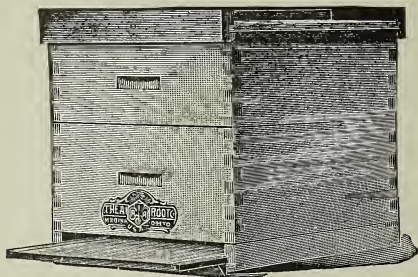
### It Will Increase Your Honey-Money

If you will send us your name and address with 40 cents, we will send you a trial trip of our Journal for 12 months. Order now and let us begin with this month's fine number. Address,

Now in its 48th Year



# The Danzenbaker Comb-honey Hive



## MORE HONEY

The construction of the hive is such that the bee-keeper can easily produce a larger surplus of comb honey per hive, for the bees are not inclined to loaf during the early flow, but get more promptly at work at the right time.

## BETTER HONEY

The claim made for this hive, that it produces **better honey**, has never been successfully contradicted. True, an **expert** may with other hives get a result approximately equal to the Danz. results; but hundreds of letters received show that the **DANZENBAKER HIVE**, in the hands of the average bee-keeper, produces more fancy surplus comb honey than any other hive.

## MORE MONEY

This statement is easily verified. Fancy comb honey is always in demand, and especially in **Danz.** sections. A crop of fancy honey on an ordinary market always brings more money; and on a poor market the fancy honey will sell while the other grades have to be shaded to find a buyer. The following unsolicited letter verifies the statement.

ST. JOSEPH, MICH., Sept. 26, 1908.

I have 112 colonies, all in Danz. hives with the exception of ten; and they will go into the regular Danz. body in the spring. The regular Danz. hive, with the right management, is the best combination in the world for comb honey. I let the "big-hive" men laugh; but when we go to market their product is no competition to mine. The dealers say to them, "If yours is as good as Hall's, bring it in and we'll take it." And it is ALL in the form and management of the HIVE.

E. L. HALL.

CENTRAL STA., W. VA., Rt. 1, box 33, August 5, 1908.

Another season of the fullest success with the Danzenbaker hive. If any one wanted to transfer my bees into other hives, he could not do it for \$5.00 each.

Yours for success, B. O. ELEFRITZ.

AKRON, OHIO, Sept. 25, 1908.

I now have quite a few colonies of bees on Danz. frames, and the result has been very satisfactory. For this locality they are certainly far superior to the Hoffman frames. I am taking off honey from the late flow (heartsease, bonaset, and aster), and supers on Danz. hives are well filled, in most instances with very little burr comb; while those containing Hoffman frames, burr combs are built between supers and frames so that it is necessary to pry and cut off the burr combs before placing escape-board.

Bees seemed to be inclined to swarm on Danz. frames more readily, or, rather, made preparations to, but I have discovered a method wherein I can control them very easily. By another season I am in hopes to have my entire outyard equipped with Danz. frames.

Having adopted the Danz. hive through your suggestion, I therefore feel it my duty to give you this report.

Yours truly, A. J. HALTER.

Now is the time to make a trial order for these hives if you have not yet tried them. The workmanship is the best; the quality is the best, and the results are sure.

Price, 5 complete Danzenbaker comb-honey hives, with sections and foundation starters, and nails, all in flat . . . . . **\$11.00**

5 hives as above, nailed and painted . . . . . **15.50**

Accept no substitute. The results accomplished by the Danzenbaker hive are generally equaled by no other.

**F. DANZENBAKER, Patentee.**



## AS THE ADVERTISING DEPARTMENT SEES IT

While it isn't always pleasant to be told that our efforts in behalf of advertisers are in vain, and that our paper is away below par when results are checked, it is sometimes possible to remedy the difficulty, and turn defeat into triumph, if we know just what the trouble is. It isn't always, however, that an advertiser who has been especially pleased with results will take the trouble to tell us so, although in many cases the information would be invaluable to the publisher. We are always glad to hear of good results, even from our smallest advertiser. For instance, just a day or two ago a subscriber from West Virginia, who had a two-line advertisement of second-hand hives in the classified columns wrote us an enthusiastic report of 25 inquiries received, and a good sale made. We presume this advertiser may have had these hives for some time, and not considered them much of an asset, as he had no need for them, although as a matter of fact they were really good hives. The expenditure for advertising them was very small, say fifty cents, and he probably realized \$15 or \$20 from the sale. Advertising was worth while in his case, wasn't it? Such information as this gives us a greater confidence in our powers and enables us to solicit new business with assurance.



Our recent effort to purge our advertising columns of undesirable copy, and justify ourselves in the face of our subscribers, came very near breaking the ties of old friendship, in one instance at least. One of our good friends, an old subscriber and advertiser, for some unaccountable reason felt that the remarks in our last issue were directed to his copy, and naturally thought that we were altogether too severe. Now, as a matter of fact, we were not referring to any current advertising, nor is it our purpose to tread on any one's toes unnecessarily. In the course of the year we are obliged to refuse some very attractive contracts, simply because we do not consider the copy suitable for GLEANINGS, and we simply explained this position to subscribers that they might understand our effort in this line and have greater confidence in the advertising we do carry. There are cases of mistakes and misunderstandings between advertisers and subscribers, and usually these may be adjusted by a little explanation, but subscribers may deal with any advertiser occupying space in Gleanings, with confidence that they will get a "square deal" every time.



Even in these days of quick transportation and accessibility of commercial centers, it isn't always possible for the busy housewife to make frequent trips to the city to shop. To such the advertising columns of our magazines are a veritable storehouse of knowledge. With a few magazines in hand she may examine the best that the shops have to offer. From catalogs and descriptive matter, sent for the asking, she may purchase the latest in wearing apparel and house furnishings. It is wonderful, too, what an educative power advertisements have. There are now so many devices for lessening household labor that machinery may be made to do a great deal of the harder tasks, and at a saving of time and expense. If it were not for modern advertising, many of us would be entirely ignorant of the progress made in this direction, and would never know the immense benefit to be derived from the purchase of some of these devices. It is no longer necessary for housework to make such a slave of a woman that she has no time for other things. She will be a more companionable wife and mother if she has a little leisure for development along other lines, and has a little time each day for something outside of the mere routine of household tasks.

## The Bee-sting Cure for Rheumatism

By the Bee Crank

The daily press recently reports that a hive of bees has recently been added to the equipment of the Roosevelt Hospital, in New York, and that surprising cures have resulted from their stings in severe cases of inflammatory rheumatism. Whether or not the treatment becomes a part of the regular course remains to be seen.

Items like the above, pure-food laws, foul-brood laws, and a demand for honey and beeswax that almost exceeds the supply, tends to make the bee industry very interesting to enterprising bee-men throughout the country. My new building, added to my already perfect geographical location at the very center of the population of the country, and in the largest inland railroad center in the world, have enabled me to carry out my determination to give bee-men the kind of service they never dreamed of before this place became a factor in the supply trade. Some bee-men have not even yet made a test of Pouder service. To such I would suggest that they send me, this spring, one sample order.

I carry a full line of Root's standard goods, and sell at factory prices. My new catalog tells all about them. Send for it.

BEESWAX.—I am now paying 29 cents cash, or 31 cents in trade. Make small shipments by express, and large ones by freight.

## Walter S. Pouder

859 Massachusetts Ave.

Indianapolis, Ind.

"If goods  
are wanted  
quick,  
send to  
Pouder."

Established  
1889





# GLEANINGS IN BEE CULTURE

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NO. 8

## EDITORIAL

By E. R. Root.

A new foul-brood law has just been enacted in South Dakota. This makes the twentieth State to enact a law against bee diseases. Let the good work go on.

THE instructions on how to avoid stings, by E. D. Townsend, in this issue, page 249, should be read by every reader of this journal. While most old bee-keepers may feel that they don't need them, yet we think they will get some hints that will be useful. Veterans can always learn from each other by comparing notes. So in this case.

### REPORTS VERY ENCOURAGING.

REPORTS from California, as to the probable honey crop this year, are unusually encouraging; in fact those from all over the country seem to be exceedingly good. But yet—but yet—"there's many a slip 'twixt the cup and the lip." Heretofore we have had seasons that were just as promising, and yet just as we were on the eve of laying our hands on the coveted prize (the honey crop) we found it was not there.

### THE SIMMINS UNCAPPING-MACHINE ON THE ENGLISH MARKET.

THE Simmins uncapping-machine that uses vertical V-shaped knives is now on the market to take the British frame. Mr. Simmins is working to get out models that will take the Hoffman-Langstroth frames and the unspaced Langstroth. He expected to send us a model before this; but owing to some mechanical difficulties, which he expects to overcome soon, he was not able to deliver his machine as soon as expected. We shall have a full set of illustrations showing his new system of uncapping.

### GOOD WINTERING AND GOOD CLOVER PROSPECTS.

UNIVERSALLY good wintering is reported. Reports from all over the United States show that bees have wintered remarkably well so far, except in one locality in Wisconsin, where F. Wilcox, of Mauston, reports that bees are not in good condition. He thinks the trouble was so much honey-dew last fall. The winter has been so open all over the country that there has been a large amount of brood-rearing, and the only thing we have to fear is starvation.

Reports have recently come in, showing that the clovers generally are in splendid condition—never better. One of our neighbor bee-keepers who says he has tramped over our vicinity considerably says he has never seen more clovers at this time of the year.

### "SOME JOBBERS WOULD NOT BUY HONEY AT FAIR PRICES."

In the *Bee-keepers' Review* for April, page 120, appears an editorial with the above caption. We can do no better than to copy the whole editorial, as it takes up the matter very fairly to all parties:

Mr. E. S. Miles, of Dunlap, Ia., complains quite bitterly of the methods of some of the jobbers who advertise in the bee-journals that they desire to buy honey. He says that they advertise simply to get in touch with "suckers," and don't expect nor try to buy of any one well enough posted to get a fair price for his honey. He says that one firm that carries a full-page advertisement the year round in a leading journal replied very slightly, almost insultingly, when he wrote in regard to selling them honey. Other buyers, who advertise all of the time that they wish to buy honey, replied that they did not care to buy at that time, or else offered prices below what might be realized if sold on commission. Mr. Miles is inclined to class some of these offers to buy honey as he would the patent-medicine advertisements or the mining schemes. He says that his experience in trying to sell to jobbers is very similar to that of Harry Lathrop's, and he thinks it is time that the editors of journals who print the advertisements of these men should know of their methods of doing business. He says that the *Review* has always shown a willingness to show up all sides of a question, hence he has written to me.

Naturally my sympathy is with the producer of honey. I wish him to get a good price for his product—all that it is worth; but I can not blame a dealer for buying honey just as cheaply as he can, providing he does not misrepresent, and does it honestly. A dealer in any kind of product is expected to buy it at as low a price as he can, and sell it at as high a price as he can get. I think it wrong to take advantage of a man's ignorance or of his necessities; but when a man writes to a dealer and asks him how much he will pay for his honey, I feel that the dealer has a perfect right to make him any kind of offer that he sees fit. If the price is too low, then the producer ought not to sell. It is possible that I have not clearly caught the spirit of Bro. Miles' complaint; but if I have, then I don't blame the jobber for offering a low price. Instead, I blame the producer for accepting it.

The trouble is, some of our friends do not see that, if they were in the other fellow's shoes, they would do just exactly as he does—buy as cheap as possible. While they would not, perhaps, misrepresent in order to catch "suckers," it is only natural that every man, within reason and common honesty, should look to his own interest. If a producer, he will sell at the highest price he can get. If he is a buyer he will make general inquiry, secure samples here and there, and then give his order to the producer quoting lowest figure for a certain kind and grade of honey.

Having said this much it is probably true that some buyers use methods that are reprehensible. We are always glad to investigate all cases of dissatisfaction arising with our advertisers. If the advertiser above referred to uses our pages we shall be glad to look into the matter if we can have his name.

### MISBRANDING; THE PENALTY FOR SELLING UNDERWEIGHT PACKAGES OF FOOD STUFFS.

The following Judgment, No. 38, of Food and Drugs Act, under date of March 10, has been received; and inasmuch as it applies to honey and to all other food products we give it right here:

In accordance with the provisions of section 4 of the food and drugs act of June 30, 1906, and of regulation 6 of the rules and

regulations for the enforcement of the act, notice is given that on the 12th day of October, 1908, in the District Court of the United States for the District of Utah, in a proceeding of libel for seizure and condemnation of 1240 cases of canned corn, each case labeled and branded "2 Doz. 2 lbs. Sweet Corn, Audubon Canning Co., Audubon, Iowa," wherein the United States was libellant and Fred J. Kiesel Company, a corporation, was consignee and claimant, the said claimant having elected not to answer, and the case having come on for a hearing, the court adjudged the goods misbranded, and ordered that they be redelivered to the claimant upon the filing by it of a good and sufficient bond in accordance with the provisions of section 10 of the act.

The goods were misbranded when received by the Fred J. Kiesel Company in interstate commerce, in violation of section 8 of the aforesaid act, for that the brand on each case represented the contents thereof to be 2 dozen 2-pound cans of corn, whereas in fact the cans contained less than 2 pounds.

The facts in the case were as follows:

On or about September 19, 1908, an inspector of the Department of Agriculture located in the possession of the Fred J. Kiesel Company, a corporation, Ogden, Utah, 960 cases, each containing 24 cans of corn, which were a part of 1240 cases consigned to it by the Audubon Canning Company, of Audubon, Iowa, and received by it on or about the 15th day of August, 1908. The said 960 cases of corn were marked and branded "2 Doz. 2 lbs. Sweet Corn, Audubon Canning Co., Audubon, Ia." An examination of a number of the cans of corn made by the inspector showed the combined weight of can and contents to be not over 24 ounces avoirdupois. On September 22, 1908, the facts were reported by the Secretary of Agriculture to the United States attorney for the district of Utah, and libel for seizure and condemnation was duly filed with the result hereinbefore stated.

H. W. WILEY,

F. L. DUNLAP,

GEO. P. MCCABE,

Board of Food and Drug Inspection.

It is not necessary to state the exact weight of a package of honey; but *if* such weight is mentioned on the label or blown in the glass, the vender of the article will be likely to get into trouble with Uncle Sam if the contents do not come up to the weights specified.

#### SHUTTING BEES IN THE HIVE WHILE IN THE CELLAR; THE HERSHISER PRINCIPLE TESTED AT W. Z. HUTCHINSON'S.

UP to a few years ago it has been good orthodox teaching to say that bees while in the cellar must not be confined in the hives. Three or four years ago Mr. O. L. Hershiser brought out a special bottom-board having a rim some four or five inches deep, with wire screen at the sides. This special bottom was so made that when applied to the hives the bees could be shut in, at the option of the user, either for moving on a wagon to out-yards or for wintering in a cellar. When we first examined the principle it seemed to us as if this might work since so much space was left under the frames; so two years ago we put our whole 150 colonies on rims embodying this principle with side ventilation, feeling sure that it was all right, and that any bees that might fly out and die would be confined within the hives, leaving the cellar itself, especially the floor, free of any of the dead carcasses from the hive.

Our older readers will remember that the experiment was disastrous—that we lost a large percentage of the colonies; and those that did survive, when set out on their summer stands were so weak that they either died outright or were practically worthless for the entire season. See GLEANINGS, page 556, April 15, 1907.

It appears that Mr. W. Z. Hutchinson, of the *Bee-keepers' Review*, some time ago criticised the Hershiser bottom-board as a "harmless invention," but the deep space under the frames with copious ventilation apparently did appeal to him as good for moving bees. At all events, he had

occasion to move some bees quite a distance before he could put them in a cellar; and to prevent them from flying out while being hauled, a half-depth body was put under each hive, having a wire-cloth screen tacked on the bottom, thus embodying in a measure the Hershiser principle. In the mean time it turned warm, and the bees became uneasy. However, the noisy bees were put in the cellar just the same, where they continued to "roar" until the weather turned cold. Mr. Hutchinson thought this would do no harm; but Mr. J. L. Byer, in the *American Bee Journal*, in commenting on this procedure, expressed the conviction that something serious might follow. The sequel showed that the bees did not winter well.

Mr. Hutchinson, as the winter wore on, found that, if he did not put those roaring bees out early, he would lose practically all of them. Fortunately after being set out the weather was not cold, and the bees recovered to a great extent, so the loss was only about 25 per cent; but he thinks that if the bees had been left in the cellar, say until the first of April, very few of the colonies would have remained alive.

While the losses did not prove to be very serious, it was sufficient to make Mr. Hutchinson feel cautious in the future in regard to the advisability of fastening bees in the hive. Whether the disturbance incident to putting the bees in the cellar in the first place was directly or indirectly responsible for the result, Mr. Hutchinson does not say, but he does say, "While I do not know it to be a fact, I believe that, if the bees had not been fastened in, the uneasy bees would have left the hive and died on the cellar bottom, and the colonies free from this disturbing element would have become comparatively quiet." That would be our opinion based on our experience at Medina.

Apparently Mr. Hershiser is or was getting good results from his indoor wintering, using this shut-in principle. Indeed, we visited his cellar some two or three winters ago, and found the bees in fine condition, with scarcely a dead bee on the hive bottoms. But he had ideal conditions—a good circulation of air, and a bone-dry cellar with cement bottom. The furnace drew the air from the cellar, carried it up through the house, then on being cooled drew it back to the cellar. This necessarily modified the temperature, and at the same time gave a good circulation, and good air; for the upstairs rooms were being ventilated often.

#### SHALL WE EXPLOIT ONLY THE TRUE AND TRIED OR GIVE SOME NEW IDEAS A CHANCE? THE BEARING OF LOCALITY.

WE understand that at the late Philadelphia convention the bee-papers (GLEANINGS among the rest) received some criticism because they published some swarming methods that have not been thoroughly tested out. While we publish some methods that we know are a proved success when the environments and the man who makes the experiment are taken into consideration, we also publish some other methods on which we do not place our indorsement, but which we give for the purpose of drawing out discussion. Over and over again we have spread before the bee-



keeping world what seemed to some but little better than heresy; but time showed that the so-called heresy was really one of the most practicable systems or methods ever given to the public. It is true some things should be killed as soon as they are born, while others should be given a chance in life.

Again, what is heresy in one locality is good sound gospel teaching for another. What is a failure with one man may be a success with another. We can scarcely judge a method or system a failure unless we test it out under the precise same conditions and environment of the locality of its author.

For example, some things that the late E. W. Alexander advocated would work splendidly in a buckwheat country after a moderate white-honey harvest, but would give very indifferent results where there is nothing but white honey in June and July. Again, a non-swarming method that will work splendidly in Texas may be a failure in Michigan or Pennsylvania. A system of queen-rearing that would give good results in New Jersey would not do at all in Northern Wisconsin. While "locality" is an overworked word, and while it is made to cover a multitude of sins, it does, nevertheless, exert a very important influence on manipulation.

#### MAKING COLONIES REAR BROOD IN THE CELLAR SO THAT WHEN PUT OUT THEY WILL BE AS STRONG AS OUTDOOR COLONIES.

OUR Mr. Pritchard, who has charge of our north yard, and to whom reference is made elsewhere in another column, has been conducting some experiments in a small way in cellar wintering. Thinking that mid-winter flights might possibly stimulate brood-rearing on the part of the cellared bees he set a few of his indoor colonies out in January on the first favorable day, and returned them. This he did every few weeks until he set them out finally. He reports that he noticed that brood-rearing commenced immediately, and, contrary to his former experience, his cellared bees were much stronger in young bees and brood than they had been other winters in the same cellar. His experiments were conducted on a very small scale, and were, therefore, by no means conclusive.

At our home yard we tried the same experiment, and apparently it did increase the brood-rearing, but not to the extent it did in the Pritchard cellar. Our Mr. Bain, who has charge of the home-yard bees, tried feeding in the cellar, using ordinary thin syrup. Brood-rearing was immediately started up, and continued so long as he kept up the feeding. When the hives were pretty well filled he stopped feeding, and immediately the brood-rearing ceased, and all eggs and unsealed larvæ disappeared.

Both of our yard men have recognized the fact that cellared bees, at the time of taking out, will usually not have as much brood in the hive as the bees that have been in double-walled hives outdoors all winter. Mr. Pritchard believed that it was the occasional flights which started up brood-rearing in the outdoor hives. He reasoned, therefore, that if his cellared bees could have just as many flights they ought to have just as much brood—more, in fact; because, while in

the cellar, after the flight the brood-nest would be in a warmer atmosphere, where the clusters could expand, and cover and take care of more brood.

Next fall we should like to have this question discussed. We have simply given the results of our experiment thus far with the view of having it tested out more thoroughly next winter. In the mean time we shall have to give our attention to the subject of honey-production and swarming.

#### BEEES AND NEIGHBORS; A PECULIAR CASE.

THIS spring we have had a peculiar kind of complaint from two of our neighbors, one adjoining an outyard and the other at the home yard. Some two or three days ago, after it had warmed up about the 4th of April, one of our town people telephoned down and said our bees had taken possession of his chicken-coop, and he wished we would come down and get them. We shortly made an examination, and, sure enough, we found the bees inside the coop; but it looked very much as if there had been robbing going on, as there were a lot of bees on the window, buzzing up and down on the glass, and others were scattered over the building. We asked the chicken man as to whether he had any sweets around the building. He was very sure he had none, and we could find no evidence of any thing of the sort. We left, somewhat nonplused.

The next day we received a complaint from one of our good farmer friends located about a quarter of a mile from our north yard, saying that the bees had taken possession of his barn, stung his cattle, and he wished we would send a man down to call off the bees. When our apiarist arrived, toward evening, the bees had left, although scores of them were scattered around in the stalls of the cow-stables. Our Mr. Pritchard, who has charge of the north yard, made a very careful survey of the premises, but he could find no sweet of any kind, although the indications pointed very strongly to the fact that the bees were after something. In pulling over the loose straw in one of the stalls he discovered a great deal of rye meal, for that was what the cattle were being feed; and then he was sure that they were after artificial pollen.

The month of March throughout had been very cool and even chilly. There had been no natural pollen of any sort; but the weather had warmed up on April 5th so the temperature was about the same as that of midsummer. Brood-rearing had started, and the bees had got to have something. In their quest for nitrogenous food it is probable that one or more of them had found some of this meal down in the unoccupied part of that barn. "News" of this "find" was communicated to other bees, of course, and very shortly an uproar started.

It is evident they had no malicious intent. They were after baby-bee food, and when they could find no more in the feed-troughs they naturally delved down in the bedding straw in the stalls. As soon as the bees appeared, the cattle began to switch their tails, without doubt. When milking time came, there was a general excitement on the part of man and beast alike.

Mr. Pritchard told our neighbor that he did not think the trouble would appear again, as there

would soon be natural pollen; but the trouble did come again the next day. Just as soon as the April showers let up enough to let the bees out, they came in very large numbers.

Now, our neighbor was a kindly disposed man—one who was willing to put up with a reasonable amount of annoyance. Had it been otherwise we might have had trouble.

We sent Mr. Pritchard down the second time with a quantity of ground feed, with instructions to scatter it around in the apiary so the bees would not have to go over to this good neighbor's barn to help themselves to artificial pollen. He was also instructed to fumigate the stalls by sprinkling some of Lee's lice-killer that is said to be very repulsive to insects of all sorts. Pritchard says it is the best stuff he ever saw to drive away robbers.

We never had a complaint like this before; and we do not remember seeing any thing like it in all of our correspondence. The conditions of this long-deferred warm weather were probably just right to make the bees crazy for nitrogenous food, so they siezed on any thing they could find.

Of course, it is now clear to us why the bees went into our neighbor's hen-coop near our home yard. Leaves, loose straw, etc., were strewn over the floor of that coop. The bees probably found just enough nitrogenous food from the scattered chicken feed to make them wild, and hence their visitation. If any one else has run up against this same kind of proposition we should be pleased to have him tell us about it.

#### THE GOOD THINGS IN THIS ISSUE; THE NEW CRANE SHIPPING-CASE, ETC.

We regard this issue of the journal as an exceptionally good one, and we are proud of its contents. The new shipping-case by J. E. Crane, on page 239 we believe introduces a new era in the shipment of comb honey, providing, of course, such case can be made cheap enough to compete with those made of wood.

It will be the means also, perhaps, of greatly increasing the sale of comb honey. Many large would-be buyers will not take on comb honey because past experience has shown them that much of it is broken, resulting in explanations and trouble in making adjustment with the producer. If those same buyers can now be assured that their comb honey will come through in good order without breakage they may be induced to take up the business again. There is no knowing what this new shipping-case is going to do in the way of helping bee-keepers in the way of seeking a *larger* and *better* market.

The new decapper offers possibilities that may be very attractive to some of our readers. We have not seen the machine, nor have we seen any testimonials of what can be accomplished.

In the mean time Mr. Samuel Simmins, of Heathfield, Sussex, England, still believes that his machine without gears or cranks is better than any thing else that has ever been put on the market. He feels that it has passed the experimental stage, and now is an assured success. His machine uses stationary V-shaped knives which he claims are far more effective than the oscillating knives, which he discarded long ago.

The article on wax-rendering in a large way,

by Mr. Edward G. Brown, p. 248, is something that will bear careful reading.

E. D. Townsend's article for beginners, on how to avoid stings, is worth a whole year's subscription to GLEANINGS. Then the Conversation with Doolittle, and the questions and answers in Heads of Grain department, are always helpful.

The Home talks, and hints on poultry, by A. I. Root, are always read with interest. Indeed, many take GLEANINGS for these alone.

#### AN UNCAPPING-KNIFE KEPT CONTINUOUSLY HOT BY STEAM FROM A TEN-CENT TEA-KETTLE.

Very shortly we hope to show something in the way of keeping an uncapping-knife hot *continuously* by means of steam from a ten-cent tea-kettle. This knife is self-cleaning. It does not require to be scraped off every ten seconds on some wooden edge, because the accumulations slide off the hot surface as fast as they lodge.

#### SOMETHING NEW IN THE WAY OF CUT COMB HONEY FOR PULLMAN-CAR TRADE.

We also expect to show something new in the way of cut comb honey in cartons for the Pullman dining car trade and for fancy restaurants in our big cities. The Pullman Car Company, through the efforts of the publishers of this journal, are now furnishing for its trade thousands of pounds of comb honey. The next time you are on a diner, speeding along at forty miles an hour, ask for some comb honey. Come to think of it, you might ask for the honey when the car is going at only a thirty-mile pace.

Right here we can not forbear making an extract from a private letter from one of the secretaries of The American Sunday-school Union, Mr. W. A. Hillis:

*My dear Mr. Root* (and all the young Rooters, even to the sons-in-law and daughters-in-law):

Imagine my surprise, when coming across the mountains the other day, while in the dining-car, on the bill of fare I found comb honey. I ate enough in the days gone by, but I took the good advice to eat honey, and I said bread and butter and some good honey with a glass of milk is good enough for a king; and when I opened the neat little package there greeted me a card from The A. I. Root Co., Medina, Ohio. I slipped it into my vest pocket. It felt good to have it there. I even wrote a letter home and told the wife how the honey made me feel good, and the card made me feel better.

Chicago.

#### AUTOMATIC UNCAPPING-MACHINES WITH OSCILLATING KNIVES; THE EARLY HISTORY OF SUCH MACHINES.

ELSEWHERE in this issue is a cut and description of an uncapping-machine or what its inventor, Mr. A. C. Miller, prefers to call it, a "decapper." While we have not seen the machine, the illustration conveys the impression to any one familiar with machinery that the machine is well designed, and it looks as if it would work.

After the matter on page 235 was made up in page form it occurred to us that, *somewhere* about the time we first took up the editorial work on this journal, in 1885, we had seen a cut and description of an uncapping-machine embodying the principle of a pair of oscillating knives operated by foot power. Sure enough, in looking through the *British Bee Journal* for April 8, 1886, we found quite an elaborate cut and description from Samuel Simmins, then of Rottingdean, England. In that issue the first sentence of the description reads as follows:



The first principle of this machine consists in its having two oscillating knives, which, being driven by foot power, have a reverse motion, while the comb is passed down between them by the operator, and the cappings are removed from both sides at once, in the quickest manner possible. These drop into the upper can, which has a strainer at bottom, through which the honey drains into the lower vessel, where it can be drawn off by a treacle valve.

We do not introduce this reference to antedate in any way the claims in the Miller patent on the machine shown elsewhere in this issue, but to show how others have been working at the same problem.

But Mr. Miller has doubtless worked out this more thoroughly than any of his predecessors. While the illustration showing the Simmins machine in the April issue of the *British Bee Journal* for 1886 clearly shows an uncapping-machine with oscillating knives operated by a crank movement, yet the principle, if we may judge by the cut, appears to have been very crudely worked out, and very possibly was not a success.

We hope to have a zinc etching, copied from the original Simmins decapping-machine, together with a full description that goes with it, in our next issue. In the mean time we have recollections also of a similar machine in one of the German publications printed about the same time.

## STRAY STRAWS

By DR. C. C. MILLER, MARENGO, ILL.

LUBRICANT for foundation-machines: 1 lb. of dextrine in 3 qts of cold water.—*Bienen-Vater*, 183.

WHEN SETTING a bee-tent, if there is the least breeze set the door toward the wind. Robbers will not trouble that side so much.

EASY to believe that, with wire-cloth separators, sections will be filled fuller, page 205, but why "more rapidly"? [We do not know. Perhaps Mr. Sorter can tell us.—Ed.]

WHICH TREE is meant, p. 155—the big cocoa that produces cocoanuts, or the little cacao that produces Baker's cocoa? or does neither of them yield nectar? [*Theobroma cacao*. Coconut-trees are fine for bees.—W. K. M.]

TWO OR THREE have suggested wire cloth with coarse mesh for bottom-rack in deep bottom-boards. Better for ventilation, but more expensive, and on cold mornings might be uncomfortable for the bees' footsie-tootsies.

COWAN says, "Wax Craft," p. 48, "Wax can not be produced at all times, but its secretion is voluntary." [Mr. Cowan is pretty good authority; and until some one will produce facts to controvert this statement it will stand.—Ed.]

THE T SUPER is objected to because too short to cover well a dovetailed hive. That's an advantage. Part of the time I want an open space at the back end for ventilation. When not needed it is very easy to close it by tacking on a cleat. [The T super is not too short when it is cleated top and bottom at both ends.—Ed.]

E. D. TOWNSEND says, p. 173, "there will be more honey in the brood-nest when the excluder is used." That's new to me. I supposed the excluder, holding the queen down, would make more brood in the brood-nest, hence less honey.

[We should like to have reports from others on this proposition.—Ed.]

MY BEES were celled Nov. 27, 1908. Dead bees swept up Jan. 26, Feb. 24, March 20, 1909. Amount of dead bees that fell on the floor during the three different periods, expressed in fractions of a hodful, *per day*, were as follows:

First period, .0183; second period, .0580; third period, .0625. Usually I think there is a greater difference in the last two periods.

KRAMER says physical heat is not sufficient for sealed queen-cells. The intimate contact of the bees with the cell has its effect on the character of the future queen, and the larger the cluster about it the better. So if a cell is caged at all it should be the shortest time possible before the queen emerges. Up to that time a cell had better be in a strong colony.

ROBBING is said to be cured, *Schweiz. Bztg.*, 381, by putting flour on the alighting-board. The robbers give it up because of so much trouble in cleaning themselves. [A correspondent recommends flour sprinkled on bees as a quick way for introducing, see page 231 of this issue. If it serves a good purpose at such times it may be useful during robbing. It is very easy to try, any way.—Ed.]

THE EDITOR OF GLEANINGS is in doubt as to what we meant (page 62) by "white wax," and proposes to try our recipe, using paraffine for the white wax. He will not succeed. Over here, "white wax" is beeswax bleached by exposure to sun and air. With that in our recipe he will be able to see his good-natured face in his polished furniture.—*Irish B. J.*, 97. [We accept the correction.—Ed.]

"SHAKING energy into bees," p. 196. When Mr. Alexander said, "That is the way to fix colonies that will not work," did he mean shaking them or giving foundation in place of full combs? [By reference to page 196 it is apparent to us that Mr. Alexander included *both* the foundation and the shaking. Perhaps his son, who is still operating his father's large apiary, can enlighten us.—Ed.]

LOUIS SCHOLL reports, *American Bee Journal*, 91, that last year at a time when bees were secreting wax so freely that some would consider it a waste to give them foundation, he gave full sheets of foundation in supers to part of his bees, and to others only  $\frac{1}{3}$  and  $\frac{1}{2}$  sheets. He says the result was a great surprise. He found that in the last lot he "had saved an average of 10 cts. in foundation per super, but lost \$1.20 of honey for it."

SIMMINS' UNCAPPER is the latest, *Irish Bee Journal*, 100. Looks like two mowing-machine sickle-bars, one on each side of the comb. Must cost, but may be good. [In our opinion this machine will not be so very expensive, as it has no moving parts. We hope to have illustrations of it in these columns as soon as we can have some engravings made. We have some doubts as to whether the machine will fit American conditions.—Ed.]

SPEAKING of deep bottom-boards, the "eke" of the "W. B. C." hive (see *British B. K. Guide*, 46) is practically a three-inch-deep bottom-board in winter, and in connection with a shallow-frame box may be used, in an emergency, as a temporary brood-chamber. Mr. Cowan writes that he

has been using this "eke" for years, which is no small recommendation. It may also be "inverted and used above in spring, for tucking in wraps and making all snug and comfortable."

AIR, water, food. Can't live five minutes without air; not very long without water; much longer without food. Air and water cost nothing; food comes high; yet most of us suffer for lack of air and water, and eat twice as much food as is good for us. Funny, isn't it? [It is funny. The whole science of health depends upon the right proportions of each of these items. Our journals and newspapers should warn their readers, and while they are about it they should have something to say about patent medicines. Some of them do.—ED.]

EMMET B. KIPPE refers to a Straw, page 1487, Dec. 15, 1908, and says last summer 3 out of 9 queens were found dead in their cages after having been left over frames 3 days. That suggests caution, but it surprises me. The Abbott plan is to put the caged queen in the hive, leave her there 2 days, and then remove the old queen and let the bees at the candy. What killed Mr. Kibbe's queens? The bees could not get at them to kill them, and with candy they could not starve. Were there escort bees in the cage, and did they make the trouble?

WESLEY FOSTER, you concede entirely too much when you say, "There may be some lines of work that require all one's thought." No matter what the vocation, the man who gives it his whole thought, day in and day out, is making a bee-line for the dotty-house. The man who wants to get the most out of his bees, to say nothing of getting the most out of life, should have something else to engage his mind, whether it be fighting saloons or potato-bugs cultivating children or chickens—something to relieve his mind from the one steady strain, and all the better if it be something to make the world brighter and better.

A NEW WAY of getting queen-cells in quantity is given by Hans Pechaczek, *Bienen-Vater*, 247. Let the best queen fill a frame with eggs. When the oldest larvæ are a day old, cut the cells into strips somewhat *Alley* fashion, only don't cut through the septum. With a narrow chisel scrape away between the strips, making sure to leave no eggs or larvæ. Destroy eggs or larva in every alternate cell in each strip. Put this frame flatwise over a strong colony having no queen or open brood. Let it be raised just enough above the top-bars so that there shall be room to build down queen-cells, not allowing the bees to get at the upper side of comb.

KNAPP says, *Leipz. Bztg.*, 14, that if a colony is moved before or after August, many field bees return to the old stand—in August, almost none. I wonder how much is in that. [This seems reasonable to us; for the inference is that, during the month of August, the field-bees are worn out and are conspicuous by their absence. Either before or after that month they would be very much in evidence, and, of course, if the colony were moved it is these fielders who would go back to the old location; but if, on the other hand, as suggested, they are worn out by their season's toil, and were no longer present, then it is conceivable that a colony in which they had

previously been active factors could be moved anywhere, because it would consist largely of young blood. This, however, is a matter that would vary according to locality.—ED.]

THE DRINK habit is shortening the lives of thousands. The lack of the drink habit is shortening the lives of a much greater number. All depends on the kind of drink. Very few beekeepers drink intoxicating liquors; but not one in ten drinks all the water he ought. If you would like to live a good while, get into the habit of drinking, not merely coffee or other hot or sweetened drinks, if, indeed, it is wise to drink any of these, but cold water—lots of it. The habit, mind. [Although you do not say so, we are of the opinion that the drinking of water should take place an hour after or half an hour before meals rather than at meal times. We understand that the taking of a small quantity of liquid at meal time is not particularly harmful, but that the swallowing of three or four cups of coffee, or an equal amount of water, while eating, interferes very materially with digestion. Many people drink only at meal times. It should, rather, be the other way. Are we not right, doctor?—ED.]

THE AVERAGE value of a colony of bees in the United States, according to Dr. Phillips' figures, p. 189, is \$2.48. As we know that thousands of colonies are sold at two to four times that price, in large portions of the country a colony must be valued at much below \$2.48—perhaps half that. That seems astounding. It must be that the real value is not appreciated. Possibly there is error in the figures. If so, no doubt the census is at fault, and not Dr. Phillips. [It is probable that the United States statistics relating to the honey business are not altogether accurate—at least in some of their details. Indeed, Dr. Phillips himself, in referring to the honey and wax crop of the United States, in the bulletin from which we gleaned these facts, says: "In the light of evidence previously given, it is obvious that the census figures are entirely too small, and are far from doing justice to the industry." If the honey and wax figures are too small, the valuation per colony may be likewise low.—ED.]

"THE DOUBLE-TIER case has much in its favor," p. 191. Thanks, Mr. Editor. Please tell us the comparative cost of the single and double tier 24-section case. I think I'll use the double-tier case hereafter, if it doesn't cost too much more for the single-tier. [We do not find the double-tier cases listed in some of the bee supply catalogs; but in talking with our Mr. Calvert he says the cost of the single and double tier cases of the same capacity and for the same sections will be about the same. The double-tier takes more glass, and the single-tier slightly more lumber. One would just about offset the other.

But it appears to us that it is not a question of single versus double tier, but it is a question of wooden versus corrugated-paper cases. If the latter will almost if not entirely eliminate all breakage, and can be sold at approximately the same price, it is apparent that the old-style packages will, in a few years, be conspicuous by their absence from the market. Apparently it is much more feasible to make a single tier case out of corrugated paper than a double-tier.—ED.]



## SIFTINGS.

By J. E. CRANE, MIDDLEBURY, VT.

That pile of honey, p. 60, Jan. 15, looks large, but it represents the cream of four colonies, which would be but 19 lbs. per colony.

Two cents a pound usually meets all expense for freight, cartage, commission, insurance, etc., here in the East where honey is sent to the large cities—page 65, Jan. 15.

W. A. Pryal, p. 55, Jan 15, gives us some very important facts that bees not only do not destroy fruit but keep it from spoiling by cleaning up such as the birds have broken into. That has been my experience. But when he talks of bees getting drunk from the alcohol of decaying fruits I don't believe all I hear.

### SHAKING A FAD.

It's amusing how many fads bee-keepers have had in bee-keeping—hives without number, frames in many forms; now this and now that; and now it is shaking bees; and there is no doubt that shaking at the right time and condition has its advantages; but unwise shaking is almost sure to result in harm; and unless one has had some experience it is not certain what the result will be.

### WAX SECRETION.

Mr. Aikin's articles in Jan. 15th and Feb. 1st numbers of GLEANINGS give a good deal of food for thought. I believe we are apt to overestimate the amount of extracted honey a colony produces, for, in my experience, such will usually be found in September much lighter in stores than those that have section-supers. There is also a great difference in different colonies in the amount of wax they produce in storing the same amount of honey. Some build very thin combs, using the least possible amount of wax, while others build much thicker combs with any number of braces, and then stuff the wax in all sorts of places to get it out of their way.

That automobile, page 83, Feb. 1, looks promising. I believe the automobile has a great future in our business. What we want is a car that will carry at least a ton, and travel ten or twelve miles an hour. It will bring outyards much nearer, in time at least, and enable a bee-keeper and assistant to accomplish much more than is possible with horses, and more conveniently, as we may drive right into a yard without fear of stings, loading and unloading at our leisure. [Yes, there is a crying need for machines of large capacity of moderate speed. Twenty-five miles maximum, with an average of fifteen miles, is fast enough for even pleasure automobiles. For farm uses, slower speeds and lower powers would be better and cheaper yet.—Ed.]

### A MARKET FOR UNFINISHED SECTIONS.

I don't agree with Mr. Henthorne, p. 64, Jan. 15, where he says that he believes "no honey should be placed in regular grades that has, be-

sides outside row, more than 25 unsealed cells." There is here in the East in some cities quite a large trade in unfinished sections. Those three-fourths full, if half sealed, pass very well, and sell for about two cents less a pound.

A grocer buys one case of perfect combs for 18 cts., another for 16 cts. per pound of those weighing three-fourths pound, and a workingman comes along. "How much for that fine honey?"

"Twenty-one cents," says the grocer. Mr. Workingman looks sad; and the grocer, observing it, says, "We have some here not very well filled, but otherwise just as good, which we are selling for fifteen."

The workingman remembers the leanness of his pocket and the difficulty of getting work, and takes the lean section, and his children are happy when they sit at their evening meal, and the grocer has made even more on his investment than if he had sold the heavy section, and the buyer has as much or more for his money as if he had bought the full section. But for all this I doubt if it will pay the Colorado bee-keepers to send such honey east. We eastern bee-keepers can supply the demand.

### ABSORBENT CUSHIONS INSTEAD OF SEALED COVERS.

I don't agree with you, Mr. Editor, page 71, Feb. 1, on sealed covers. It is true that, where the cover is porous, the packing is often damp in winter; but I much prefer to have the dampness in the packing than on the sides of the hive and combs. The packing dries out in early spring, and is all right, and the packing directly over the bees is rarely or never damp on the under side next to the bees.

Later.—I have just been out examining some hives with porous covers, and find some moisture around the edges of the packing; but the brood-chambers are as dry and clean as in May or October. If a horse comes in wet in January we do not cover him with an oilcloth and then a blanket, but, rather, a nice warm woolen blanket that will retain the heat and let the moisture escape. The sooner we can get rid of the moisture of a brood-chamber in winter the better. [See what G. C. Griener says on sealed covers. In this locality sealed covers give us better colonies.—Ed.]

However, I am interested in that hive hermetically sealed, and should like to watch it myself; also that hive in your office. Mr. Arthur C. Miller, of Providence, told me some two years ago he had wintered nuclei perfectly in this way.

### RYE MEAL AS A SUBSTITUTE FOR POLLEN.

I have supplied my bees with finely ground rye, and they are busy carrying it in when the weather is warm enough. I put it in shallow boxes some little distance from the hives, and have practiced this since I have kept bees. I have not witnessed any bad effect from feeding it. As soon as the bees will take syrup I supply them with two quarts to the hive. I find that the rye flour and syrup (made of granulated sugar) is of much benefit in the early spring.

Kendallville, Ind. CHAS. W. KRIWITZ.

## GLEANINGS FROM OUR EXCHANGES

By W. K. MORRISON, ME'INA, O.

Those who desire to keep well informed in regard to irrigated lands in the West can hardly do better than subscribe for *Ranch and Range*, Denver, Col.

A new bee-journal has made its appearance at Kiev, Russia. It is entitled *The Bee-keeper of the Ukraine*. Kiev is Mr Titoff's headquarters, and doubtless his presence had something to do with it.

*The Federal Independent Bee-keeper*, in its January issue, mentions the New Zealand flax-plant as a great yielder of honey. I hope to see the day when this valuable plant will be successfully introduced into the United States.

Many GLEANINGS readers reside in tropical countries where literature in regard to farming is scarce. For them we can recommend the *Journal d'Agriculture Tropicale*, 164 Jeanne-d'Arc prolongee, Paris, France. It takes in a wide sweep of the agricultural horizon. It gives very accurate accounts of the beeswax and honey markets in Europe. It has fine reviews of books on tropical agriculture.

In *L'Apiculteur* for March, Mr. Alin Caillas has an excellent article on the radio-activity of honey. He is the official chemist of the French bee-keepers' association, and ought to know what he is writing about. He says that Madame Curie has stated that honey examined by her was radio-active; and as radium has already proved itself very potent in the treatment of lupus and cancer, Mr. Caillas thinks this will increase the consumption of honey.

### A NEW BEE-JOURNAL.

With the title of *Revue Francaise d'Apiculture* a new bee journal has recently made its appearance at Marseilles, France. It is a monthly, and is published by the bee-keepers' association, taking in the territory around the mouth of the Rhone. As it is published in a fine bee country, and under good auspices, it ought to succeed in carving a niche in the temple of fame. France has something like thirty bee journals at present.

### PROFESSOR GASTON BONNIER.

By the death of Monsieur Giard, the presidency of the French bee-keepers' association became vacant a short time ago. Luckily the French had some big timber handy, so they elected the famous Sorbonne professor, Gaston Bonnier, to the president's chair. Undoubtedly he is the best-known writer on bees now living; besides, he is well known in the botanical and zoological world by his books on these studies. He is the professor-in-chief of the natural-history department of the normal school attached to the Sorbonne (University of Paris).

With his uncle George de Layens, also a professor at the same university, he wrote the com-

prehensive bee book, "Cours complet d'Apiculture" (A Complete Course in Bee-keeping), a standard French work which has had a large sale, and has been translated into other languages — notably the Spanish, Italian, and Russian.

Either by himself or in conjunction with his uncle (now dead) he has published a number of other books. A complete botany of France is a joint work. A feature of it is, that all bee-flowers are marked. By himself he got up the "New Flora," which contains 2028 photos of plants to aid in identification. He has another on the "Nectaries," which describes in a brilliant manner the nectar-secreting organs of plants. This originally appeared as a paper inserted in the *Annals of the Academy of Sciences*, Paris, 1879, but is now published in book form.

Mr. Bonnier's strong points are physiological botany and evolution. One might readily judge this by the titles of some of his books. One, for example, is the "Enchainment of the Organisms." One of his recent essays, which was at once copied into several languages, is "Organized Anarchy among Bees." Mr. Rudyard Kipling tried to combat the effects of this article by one of his own; but as Mr. Kipling knows naught about bees, little attention was paid to it. Mr. Bonnier, on the other hand, has probably done more to discover how bees divide up their work than any living man. Moreover, he has a fine apiary of his own at the bee-keepers' school, and also an apicultural laboratory in connection therewith. He also has a laboratory of physiological botany. The former is at Louye, and the latter at Fontainebleau.

In the course of his investigations he has made many journeys through Norway and Sweden, the Tyrolean Alps, the Carpathian Mountains, and the Pyrennes. In this work his name is associated with that of Mangin and Van Tieghem, savants with an international reputation. The former is the author of a splendid work on the deserts of the world. Their object is to gather up facts relating to rare phenomena everywhere.

Mr. Bonnier was early initiated into the mysteries of bee-keeping by his uncle, already referred to. At the age of fifteen he engaged in the usual routine work of the apiary, and for many successive seasons continued to help his relative, who was an extensive bee-keeper. He made frequent visits to the apiary of the famous Hamet, founder (in 1856) of *L'Apiculteur*, and author of a well-known work on bees.

He commenced to write for publication in 1877, and in 1879 he published his "Nectaries," which was sufficient to stamp him as a man of science. His contributions on practical bee-keeping have generally appeared in *L'Apiculteur* or in *Rucher du Sud-Ouest*. The "Cours Complet sur Abeilles," first appeared in 1895, and there have been several editions since. Usually it is considered a high honor to be elected to so important an office as president of a large society of bee-keepers covering the whole of France; but in this case it is the society which is honored by his acceptance of the office. Briefly, Professor Bonnier is an excellent sample of the modern man of science.

Most of the facts herein stated appear in the March number of *L'Apiculteur*, from which I take the liberty of drawing them.



## BEE-KEEPING IN THE SOUTHWEST

By LOUIS SCHOLL, NEW BRAUNFELS, TEX.

The proper time for moving bees used to be in the winter; but not so now. Too many have discovered that it has a wonderful effect on them to move them to a new place just long enough before the honey-flow to cause the move to stimulate the colonies toward rearing a great lot of bees of the right age to roll in the honey; and, my! how they do it too!

"Shaking" bees is all right so long as the right conditions prevail and you know how to do it and what to do it for. It should be remembered that, by using this term "shaking," it is not always meant that the bees are shaken off the combs, etc. We apply the term to all kinds of manipulations with the bees that have a tendency to stimulate them. We are making much use of this in various ways again this season.

### WHAT KIND OF PROPOLIS DO THE CAUCASIANS GATHER?

Caucasians collect much propolis, but it is not sticky—more like putty, of a grayish-green color, and easily scraped off—p. 125, March 1. Does this mean that they will collect this kind when other bees are collecting that sticky stuff, or do they get the putty kind when other bees do not bring any propolis at all. It would seem from the above that they gathered only a certain kind, different from that brought in by other bees at any time.

### THE EFFECT OF THE COLD SPELLS.

Several late cold snaps, not cold enough to do serious harm, have retarded the bees and plant growth just enough to give all a sudden start at the proper time. Every thing was rather in advance of that time of the year until the recent cold spells. Had it not been for these, bees would have been swarming in a wholesale way, especially since they wintered splendidly on account of the great amount of stores from the late fall flow. Although the vegetation would have been early it would also have been less thrifty on account of being too early in the season. The bees, therefore, would have suffered much. We are trying to keep up with our colonies and discourage the swarming fever until the mesquite flow, which we expect early this month. After that opens the bees will resort to storing honey, and drop swarming operations.

### A NEW TRICK ON THE ROBBERS; GIVING IT TO THEM "IN THE NECK."

A unique way for dispelling robbers that are trying to prey on a colony was shown me recently by my assistant. Instead of going to the trouble of smoking the bees, contracting the entrances, etc., he simply gives the hive containing the colony being robbed a vigorous kick or two. This results in stirring up the bees, and they come out with a rush, and pounce on every thing in sight. The "robbers" are the ones that

get it "in the neck," and a vigorous fight is then kept up against them. It is the easiest way I have seen, and can be accomplished in less than no time while one is busy at something else. A great mistake, and one I have often seen bee-keepers make, is to pour volumes of smoke into a colony when robbers are trying to enter. This pacifies only the inmates and makes them the more helpless.

### BEES BY THE POUND; D'SEASES.

Speaking of sending bees by the pound, etc., in cages, p. 120, Mr Editor, you say, "Besides effecting a great saving in express charges, it will eliminate the possibility of sending foul or black brood from one portion of the country to the other." It seems that this would make it less dangerous, but I am doubtful as to whether "it will eliminate the possibility" entirely or absolutely. It seems as though there would still be a chance for some of the spores, if not the germs, to find their way along on the trip to the destination, unless the recipient is very careful and knows what to do. It is to be understood, of course, that the bees came from an infected apiary, and then the packages would be very much like a queen-cage with bees and queen. We have known of cases where disease has been spread by such. I may be all wrong about the above, however.

### A NEW KINK IN MOVING BEES.

We have been moving bees considerably this season, and have learned several new kinks. One of these is from M. E. Van Every, one of our extensive bee-keepers who claims that, when bees are to be moved a long distance, it is better to load them on the previous evening, haul them several miles after dark, and then leave them standing on the wagon until next morning. They are then moved any distance, and will be much more quiet, and haul better, than if kept moving without the stop immediately after loading. For this reason, when Mr. Van Every has bees to move from his home yards he loads them in the evening, hauls them to the far end of his pasture, and returns to hitch up again the following morning to move them to their final destination. Has anybody else ever tried it?

### IS EARLY SPRING WORK NECESSARY?

Early spring manipulation, says Mr. Rauchs, p. 125, March 1, is not necessary, because the bees in a full hive, with plenty of stores, do not have to be looked at till the first of June. This depends upon locality; and while it may hold good in Colorado it does not pay to leave your colonies so much alone here. The time of the honey-flow has much to do with it also, and in this respect he may be right. For an earlier flow it would be better to shake up the colony early in the spring. Especially is this true with a colony well filled with stores, as it often happens that the queen is hampered in her egg-laying by combs clogged with honey. The bees often clog the combs next to the brood with pollen to such an extent that the queen is kept from spreading out. These and other obstacles should be looked after early, and the colony shaken up.

## CONVERSATIONS WITH DOOLITTLE

AT BORODINO, NEW YORK

### UNITING WEAK COLONIES; WHEN TO DO IT.

"It looks to me as if I had quite a number of weak colonies on hand. Some of them were weak in bees last fall, but I concluded to winter them. Can I unite them to advantage?"

"Yes. Have you tried the Alexander way of building them up by setting the weak ones over the strong ones, and, later on, when both are strong, setting the upper colony off on a separate stand?"

"Yes, I tried that last year, and the queen which was in the weak colony was killed every time, and in some of the trials the bees and all were killed, so that a total loss was made. Do you recommend that plan?"

"Hardly; for my experience and that of my partner, Mr. Clark, has been somewhat similar to yours. Years ago the books and papers used to tell us that the time to unite was when it was discovered that any two colonies were too weak to be of use alone, which generally happened in April; but after practicing this for a few years I became convinced that colonies thus formed are no better at the end of two or three weeks than each one would have been if left separate. I have put as many as seven remnants of colonies together in April, the seven making a good large colony at the time, and in a month all were dead."

"Not very profitable, I should say."

"No; but, of course, all might have died, even had they been left separate."

"But how you work to make the uniting profitable?"

"After coming to the conclusion that I could not unite bees with profit in the early spring I adopted the following plan, which has proved successful for more than a score of years: On some cool morning, about the middle of April, I look over all of my bees by removing the cover and chaff packing to such hives as are fixed this way, when the quilt or covering immediately over the bees is rolled up along its edges, so I can see how strong in bees the colonies are, and all that do not occupy four spaces between the combs are marked."

"But my bees have their covers sealed down by propolis; hence I would have to break things apart to look at them."

"Glad you spoke of this. In that case the hive is raised from the bottom-board, when a glance up between the combs will tell you regarding matters the same as looking down from the top."

"All right. Now what am I to do with the colonies which occupy less than four spaces between the combs?"

"The first warm day they are to be confined with a division-board on as many combs as they have brood in, together with one full frame of honey placed next to the side of the hive. The rest of the combs are stored away in the honey-house till they are needed later, when the colonies are stronger. The entrance of these colonies is now made at the side of the hive, opposite the frame of honey, and in this way we have no trouble from having these little colonies robbed out."

"How large an entrance should be given?"

"Not over one-half inch for the smaller ones, and not to exceed an inch in length for the best ones. Let the colonies alone for about two to three weeks, according to the weather, unless we find by their not flying that some have died, in which case we take care of the hives so robbing will not get started on the honey they had. At the end of three weeks the best will have their frames full of brood clear down to the bottom of the combs, except the one which had the honey in, and that will probably have some brood in it. When we find the colonies in this position, we move the division-board along; insert the frame having some honey and some brood in the center of those filled with brood, and put in a full frame of honey next to the side of the hive, as the success of these little colonies depends quite largely on having all the stores their wants call for, as they will not have field bees enough to help them along this line very much. In about a week more the comb set in between the brood will be filled as full of brood as the others. I go over them in this way once a week till I have five frames of brood in the strongest, when I take a frame of brood just emerging from the colonies having five full frames, and give it to the next strongest, say one that has four frames, putting a frame partially full of honey from those stored away when we commenced, where the frame of brood came from. I keep on till all of those fixed with division-boards contain five frames of brood and one of honey."

"About what time of the year is it when all are likely to be full?"

"From the 10th to the 20th of June, according to the season. I now go to No. 1 and open it, looking the frames over till I find the one the queen is on, when it is set outside, and the four remaining frames and all of the adhering bees are taken to No. 2. I now spread the five frames of brood in No. 2 apart, so as to set the four frames brought from No. 1 in each alternate space made by spreading the frames in No. 2. This completely fills out the hive of No. 2, as it now has nine frames full of brood and one of honey. The hive is now closed, when in a few days it will be ready for the sections, which is generally right in time for the harvest from white clover; and, according to my experience, fully as good work will be done by this colony as by those considered the best at the time we put in the division-boards in April."

"Good! But what becomes of No. 1?"

"As there were only four frames taken from this, there is still left the one of honey next to the side of the hive, and the frame of brood, bees, and queen standing outside. I now place the frame of brood back and put a frame partly filled with honey between it and the one of honey, adjusting the division-board, when the hive is closed. I now have a nice nucleus from which to get a queen to use, if one is needed for any purpose; and if not, this little colony can be built up to a good one, often storing quite a surplus from buckwheat."

"Then, by this process of uniting, my numbers would not be diminished so far as I can see."

"No, not in the least, unless some of the colonies were too weak in the spring to survive, or you used the nucleus for queens during the season."



## GENERAL CORRESPONDENCE

### VENTILATION OF HIVES DURING SUMMER.

#### The Value of a Deep Space Under the Frames with an Entrance at Both Ends of the Hive.

BY J. P. BLUNK.

[We wish that we were able to give our readers the whole of Uncle Joe Blunk's letter, as it is a very interesting one; but on account of a lack of space we have been obliged to condense it in order to use the main points. We can not refrain, however, from giving the last sentence or two from the letter. "As I jog along in the evening of life I am having more fun than a monkey-show with my bees. They are fine for an old man."]

Dr. Miller uses a special deep bottom-board that provides a full two-inch space under the frames during winter, for he winters in the cellar. During summer he uses a dummy of suitable dimensions which he shoves under the frames to provide an ordinary bee-space. Having this in mind the reader will understand the discussion which follows.—ED.]

A year or so ago Dr. Miller described his slatted form or dummy which he uses in the deep space under his frames to prevent the bees from building burr-combs, etc., and he said it troubled him because he could not leave the entire two inches of space under the frames for the comfort of his bees during the hot weather. I believe that there is a way to prevent burr-combs without the use of these dummies, for my hives stand on deep bottom-boards during hot weather and I have had no trouble. My bees do not cluster out on the fronts of the hives, and they have not been obliged to fan at the entrance for want of proper ventilation.

Has any one ever seen burr-comb built in a deep bottom close to the two-inch entrance? Is it not always found at the rear of the bottom-board, where it is needed? I prevent these burr-combs at the rear by leaving an entrance at the back of the board also. To do this I take off the rear cleat of the bottom-board.

Many have made an effort to provide better circulation by giving an upper entrance in some of the supers; but we all know that cold air in the supers means unfinished sections. If the draft of air can be carried across the bottom-board instead of up through the hive, there are fewer unfinished sections, and the bees can easily attend to the ventilation needed. There is much friction to overcome in ventilating a strong colony of bees, especially when there is but one entrance. All practical miners wonder how bees manage to live in a hive where there is but one opening through which the air must pass in and out.

I am like Dr. Miller in thinking it quite a task to go through the apiary and turn the bottom-boards upside down in order to give a deep entrance when hot weather comes; but I always had to do this, as I did not approve of a deep bottom-board in the spring. When putting together the bottoms I do not nail on the cleat at the rear of the board, and I can, therefore, remove it when I wish, thus providing a rear entrance. When a colony becomes strong, and shows signs of hanging out, this rear piece is removed, and then later

on I take four pieces of lath, half the length of the hive. I raise one end of the hive from the bottom and place one of these pieces on each side rail, and then go to the other end and do the same. If the hive stands in the shade, this one set of blocks is usually sufficient to keep the bees comfortable; but if it stands out in the sun and in a hot place, I keep adding these blocks until the bees are satisfied with the conditions. Sometimes I have over two inches of space under the frames, and yet have no burr-combs. I account for it by the fact that there is too much cold air for comb-building. With these two entrances the bees have no trouble in getting air through the top of the supers when needed, and yet there is no cold air in the supers to stop the work there. If the weather turns cold, the bees choke one of the entrances and govern the circulation to suit themselves. When all work in the supers is over I remove the strips and let the hive back on the bottom, and when the hot weather is over I close the rear entrance by putting back the cleat.

Dr. Miller is the only bee-keeper I know of who does his part in trying to give his bees all the fresh air they need. In overcrowded hives the bees use up the air very fast when the circulation is bad, and eventually they will cluster outside in "nature's big hospital" to recover their health. The double entrance overcomes all such troubles. I have found that bees will not build comb out in the open if they can find a sheltered place; and by making a draft of air across the bottom-board they do not build comb below the bottom bars.

Mooreland, Iowa.

[This letter was sent to Dr. Miller, whose reply follows.—ED.]

This is interesting. If Uncle Joe has established that, with the bottom-board open at both ends, there will be no building down, we owe him a vote of thanks. There can be no question that there is a better chance for ventilation with an opening clear through. But will not the bees build down in so deep a space, even if it is practically outdoors? In the old days of box hives, when bees were crowded out, it was not such an unusual thing for them to build comb outside. Sometimes a swarm hanging on a tree is delayed by stress of weather, and remains permanently, building its combs out in the open.

On the other hand, some years ago I had blocks sawed to put under each corner of a hive, raising it an inch. That inch, added to the two inches of the bottom board, made three inches under bottom-bars, but I don't remember that there was any building down.

Why should the bees go so far out of their way to build outside the box hive, and yet not build in the more convenient three-inch space under bottom-bars? Well, they were crowded in the box hive, no room at all there, and it was outside of nowhere. In my hives there was an abundance of room in supers, which they preferred to the more exposed space at bottom—an argument, by the way, for lots and lots of super room.

"Why didn't I continue the plan?" For two reasons. One was that it was a good bit of work to draw the staples and raise the hives in the summer, and then to fasten them down again in the

fall. Another reason was that it made trouble to have free opening for the bees all around. They would come out at the side and attack my legs when I sat at work beside a hive. When a swarm issues it's much easier to watch for a queen coming out at the entrance than to watch for her at all four sides. Then, the hives being close together, in groups of four, the bees of a swarm would get into the adjoining hive at the side or at the back end. A queen would sometimes be lost that way.

Where hives are not placed back to back, Uncle Joe's plan ought to work nicely. But instead of having to raise the hive to put something under the sides, why not merely leave out the back end? Then, when desired, a block could close the back end. C. C. MILLER.

Marengo, Ill.

## THICK VS. THIN SYRUP FOR FALL FEEDING.

Some Experiments to Show that Bees Need to Consume Considerable Honey in Order to Evaporate the Excess of Moisture from Thin Syrup.

BY J. E. CRANE.

Some of the readers of GLEANINGS may remember I reported quite a loss of bees in the winter of 1907 from starvation because I fed thin sugar syrup instead of the thick syrup that I had been in the habit of feeding in previous years. The trouble was that the bees consumed a large quantity of the feed I gave them in reducing it to the consistency of honey. During the summer, therefore, I determined to make some experiments to find out, if possible, how much honey, or sugar syrup of the consistency of honey, it required to evaporate the water from thin syrup fed to bees. I also wished to know the possible loss resulting from feeding syrup cold instead of warm.

In order to carry out the experiments planned above I weighed three groups of colonies, five in each group. To the five colonies in one group I fed 75 pounds of sugar mixed with  $37\frac{1}{2}$  pounds of water, making a syrup of two parts of sugar to one of water. To another group I fed 75 pounds of sugar mixed with 75 pounds of water, making a syrup of equal parts of each. This was fed warm. To the last group I fed the same amount as to the second; that is, 75 pounds of sugar and 75 pounds of water, but the syrup was fed cold.

The weather was warm and favorable; and after two weeks I again weighed the colonies and found that the colonies of the first group—those fed with the two-to-one syrup—had gained 74 pounds. Those of the second group, which had been fed the warm thin syrup, had gained only 65 pounds. The last group, which had been fed cold thin syrup, had gained but  $64\frac{1}{4}$  pounds. Now, the difference in the gain of the first and second groups shows the amount of honey, or sugar syrup the consistency of honey, which the bees were obliged to consume in evaporating the extra amount of water given to the colonies of the second group. In other words, it required 9 pounds of honey to evaporate the extra  $37\frac{1}{2}$  pounds of water fed to the second group. We

see further that, if the syrup is fed cold, it requires  $9\frac{3}{4}$  pounds to do the evaporating.

If we were to take 75 pounds of sugar and mix it with 15 pounds of water the syrup would be of about the same consistency as honey. If there were no loss, therefore, the increase in weight would be 75 plus 15, or 90 pounds.

We have found that it required 9 pounds of honey to evaporate  $37\frac{1}{2}$  pounds of water; or, in other words, 1 pound of honey to evaporate  $4\frac{1}{3}$  pounds of water. We can see, also, that the colonies of the first group were obliged to evaporate just  $22\frac{1}{2}$  pounds of water in order to bring the syrup fed to the consistency of honey ( $112\frac{1}{2}-90=22\frac{1}{2}$ ). This means that the bees used just  $5\frac{3}{4}$  pounds of honey in evaporating it ( $22\frac{1}{2}\div 4\frac{1}{3}=5\frac{3}{4}$ ). The colonies in the second group, which had been fed the thin syrup, were obliged to evaporate 60 pounds of water ( $150-90=60$ ). This means that these colonies in this second group were obliged to consume  $14\frac{2}{3}$  pounds of honey to do the evaporating of this 60 pounds of water ( $60\div 4\frac{1}{3}=14\frac{2}{3}$ ). These results show us that, while 74 lbs. of thick syrup, of the consistency of well-ripened honey, can be secured by feeding 75 lbs. of sugar in a thick syrup (two of sugar to one of water), we get but 65 lbs. when fed as a thin syrup (equal parts sugar and water), or  $\frac{7}{8}$  as much, thus losing  $\frac{1}{8}$  when fed thin, almost exact.

There is another thing that we may learn from these experiments. In addition to that which the bees required to reduce the syrup to the consistency of honey, it would seem that they consumed  $10\frac{3}{4}$  pounds; thus, 74 lbs. stored +  $5\frac{3}{4}$  lost in reducing +  $10\frac{3}{4}=90$  lbs., or approximately 2 lbs. 2 oz. to the colony. This does not seem a large amount for the two weeks' time, considering the increased activity of the bees, causing, of course, a greater consumption of stores. I regret that I did not select five colonies that were not fed at all, and weigh them to find exactly the loss due to the extra activity during the time when the feed was being given. Doubtless a part of the loss was also caused by the bees changing the sugar syrup into wax.

As I said before, the above experiments were made for the purpose of finding out to my own satisfaction the cost of evaporating the excess of water; or, in other words, reducing the syrup to the consistency of honey. Perhaps I should add that, in this experiment, I assumed that no brood was reared. I did not examine any hives to see; but I have found it rare indeed that any brood is reared at the season the experiment was made, Sept. 15, unless in a colony that has recently superseded its queen. I also assumed that no honey was coming in. There may have been a very little, but I think not enough to affect the result materially. It is reasonable to suppose that, although the hives were filled with comb, yet that some wax was elaborated or produced for capping the syrup, and perhaps for building out to some extent the combs, or lengthening out the cells in which it was stored. I might say further, that, while the amount fed to each group was accurately weighed, that to each hive was not accurately weighed; but by the use of feeders of a given size I could tell quite closely the amount given to each colony, and I found some variation in the amount required for reducing the syrup in different hives of the same group. This is as we should expect,



and it was for this reason that I used five hives in each group rather than one or two, to get an average.

It seems probable that a strong colony will reduce syrup with less loss than a weaker colony; also that there would be less loss in warm weather than when the weather is cool with frosty nights.

I used scales with  $\frac{1}{4}$ -lb. notches, which might make a possible error. It will be noticed that in these figures I have used the results between warm thick and warm thin syrup. The difference between warm thick syrup and cold thin syrup as usually fed is even greater.

As it requires  $5\frac{1}{2}$  times as much heat to reduce water to vapor as to raise the same amount of water from  $32^{\circ}$  to  $212^{\circ}$ , we can see the bees have not been wasteful of their fuel.

I have had a suspicion that the loss of 2 lbs. 2 oz. to the hive may have been due in part to the labor of carrying the honey down into the hive, but have no way of proving it.

Middlebury, Vt.

## QUEEN INTRODUCTION.

### Queens Introduced and Laying Within the Hour, and Never a Failure.

BY JOSEPH GRAY,

Expert in Apiculture, and County Council Lecturer.

Simmins' direct-introduction plan, though successful, does not make headway, because it can be used only toward evening, and is, therefore, unsuitable for all-day manipulation.

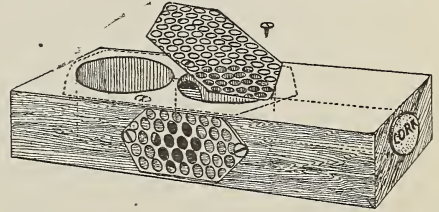
Dr. Miller's drowning plan of introducing looks risky; and to daub a queen with honey from the stock to which she is to be introduced is not nice, and is attended with some risk. Like Mr. Holtermann, I have sighed for some quick method of introducing queens, and success has now rewarded me, and I submit what I believe will become the most popular method of queen introduction—viz., Gray's flour method. I can take a queen from a nucleus, remove the old queen, and have the young queen all right and laying within the hour. A traveled queen or a virgin can be as easily and safely introduced, even though the bees are all alert to seize a leg or wing of the first robber that dares intrude.

To follow this plan of introducing I open the hive, find the comb with the queen on, and remove her. I then lay the comb flat so that both hands are free, dust the bees on the upper side of the comb with flour from a flour-sifter, open the large door of the cage, shake out the queen on to the comb, and dust her with flour. If a flighty queen, I take the precaution to dust her with flour before I open the cage.

If the queen has been removed the day previous, there is no need of removing a frame. I take off the cover, lay the cage on the frames, door upward, and soon a crowd of bees collects around the cage. I dust the lot with flour, swing open the door, when—out steps Her Majesty and attendants, *every one of which will be accepted*—a sure proof of the reliability of the method, for with ordinary plans all attendants are usually desisted.

I use Pott's queen-cages, which can also be used as cell-protectors or nurseries. The differences between these and the regular Benton cages are:

1. The candy-hole is made from the end, using only a half-inch bit.
2. A half-inch hole is made through the side into the center compartment.
3. The top and side covers are of perforated metal, and cut so that they do not catch the clothing.
4. These covers are put on with a screw, which serves as a hinge, and can be tightened with one turn of the screwdriver, so that the imprisoned bees can not force open the door and escape, which I have seen them do when laid down temporarily.



The convenience and advantage of these cages will be readily seen in the following operations:

Go to your nucleus colony and pick up the comb with queen; grasp it with the left hand, also hold your queen-cage with the same hand, your thumb over the opened side door. Now with the right hand pick off your queen and she will easily pass through the half-inch door. A three-eighths or quarter inch is not nearly so convenient. You can cage as many bees as you wish, with seldom a sting. The covers are so cut that they will not catch the clothing and pull open on the way to the out-apiary.

Long Eaton, England, Oct. 20.

## CLOSING HIVES FOR THE WINTER A SUCCESS.

BY E. N. WOODWARD.

Referring to the article, "Outdoor Wintering," page 110, I will say that the plan as described has proved a success so far as I am able to judge.

My bees were closed up in December, and were undisturbed until the first of March, when I carefully removed the packing from the top, and found them, as I expected, nicely clustered between the frames, apparently healthy and strong, and with plenty of honey. To be doubly sure, I opened the entrance to the air-chamber in front; and, finding them quiet, with only a few dead bees scattered here and there, I closed them again, and they will remain closed until the time comes for them to do their housecleaning and spring work.

My prime object has been to save winter stores, as compared with the common method of outdoor wintering.

Now, this is no problem with me. It is a settled fact. I have wintered bees with this closed-up-air-chamber combination two different seasons, and with uniform success. The reason is plain when we stop to think that a bee is not a

fowl nor a human being, but simply a bee, subject to the laws of insect life. It is the colony that forms the unit, and we must treat them and provide for their wants as a colony, and this closed-up air-chamber serves as an *outside world* to this individual colony. They are not confined, but are free to pass out of their hives and in, but in total darkness, and right here lies the secret. This dark air-chamber outside of the hive-entrance cuts a big figure. Without it failure would be the result; with it, the bees are comfortable, satisfied, and contented. This gives them all the walking-room they ask for, and all the change of air they need. It is automatic in its operation.

One satisfactory feature of this plan is that a colony of bees kept in this warm secluded condition does not consume as much honey as when packed in the ordinary way—an item of dollars and cents which is well worth considering.

This enclosed air-chamber is 4×4×4 inches with the entrance to the hive closed except this 4 inches which opens into this enclosure. The outside entrance is not closed until about the middle of December. I only wish to say that this is no freak or wild theory but a practical method of wintering our bees with a large saving of winter stores.

If this plan, as I have outlined it, has been tried before and proved disastrous, I should like to know when, where, and by whom.

Hillsdale, Mich., March 24.

[In our footnote in reply to Mr. Woodward's former article, wherein he described his method of shutting bees in during winter, we spoke somewhat disparagingly of *any* method that did not permit the bees to pass from the hives during winter whenever the weather permitted. We drew attention to the fact that we had had some disastrous experience when we tried shutting bees in with straw piled loosely over the entrance to shut off flight and daylight, and yet permit air to pass back and forth to the hive, and of how others had failed.

In some private correspondence that has been passing between Mr. Woodward and ourselves our correspondent claims that his method of confining the bees is very different from that which we had tried—that he has a large closed ante-room in front of his entrances. See his description in his last paragraph. If Mr. W. has solved the problem of shutting bees in during mid-winter we shall be only too glad to recognize it. We hope he will continue his experiments and keep us posted. In the mean time the average bee-keeper should try it on a small scale only.—Ed.]

## CARPENTRY FOR BEE-KEEPERS.

### A New Land with New Conditions.

BY F. DUNDAS TODD.

When I started out in May, 1908, to go in for bee-keeping on a larger scale than formerly I had all the advantages and disadvantages that accompany a clean start. I was in a strange land on the very outposts of civilization, having planted myself and family at the southern end of Vancouver Island, within a very few miles of the

vast primeval forest that practically holds complete possession of this not insignificant part of the last Great West, but which, to the great mass of humanity, is little more than a name.

Round about various small arms of the sea that now fill up the hollows that ages ago were scraped out of solid rock by huge glaciers there has grown up in a slow sleepy fashion the city of Victoria; but little more has been reclaimed from the forest than was absolutely necessary to provide standing room for the city, and a few small farms that do not begin to provide the food supply of the inhabitants.

It is a beautiful spot, not excelled in natural picturesqueness by any site on earth with which I am familiar; but the architecture and general layout of the improvements often make me wonder if the residents begin to appreciate how greatly they are favored by nature.

My old friend and rival, Mr. Russell, had preceded me by a few months, and so on my advent I found him in possession of almost a score of bee-hives which he had scraped together by dint of much perseverance. A more heterogeneous conglomeration, it seemed to me, could scarcely be gathered together, for it looked as if every kind of hive that is referred to in the A B C and X Y Z was to be found represented there. I wanted to know if he was starting a museum of bee-keeping appliances, but he grinned complacently as he assured me he had had the pick of the region, and all that was left for me were the ones he had rejected. When after much searching I did get started I found myself the owner of nine colonies which were housed in six different styles and sizes of chambers, and I feel certain that not another hive was for sale in the locality. I need not give further details, but I felt I had struck trouble "all of a heap."

My plan of campaign was to increase as rapidly as possible and to ignore surplus. Bees and honey are practically interchangeable terms, for the one can be converted into the other, and I knew, of course, that, if I worked for bees, surplus honey was not to be expected.

My first step was to decide upon the style of hive to adopt. On questioning the local market I found that section honey wholesaled 30 per cent higher than extracted, and I therefore decided the latter would be more profitable and the easier to handle, as a one-man proposition, with the occasional help of my son. Then since I had turned the half-century mark, and had for almost all my life been an indoor worker, whose heaviest tool had been a pen or pencil, I felt it would be foolish to handle hives of much weight, and so my choice fell upon the divisible with shallow extracting-frames. Simplicity always appeals very strongly to me, and I therefore favored a system that is apparently interchangeable to the utmost extent. Again, this is a region of moderate temperatures. Even through June, the month of our honey-flow, the thermometer rarely reaches the 70-degree mark, while in July and August it is uncommon for it to go above 80°. The snow-clad mountains all around rapidly cool the atmosphere at night, and the thermometer will drop, even in the summer time, to 52° before morning. It therefore seemed to me that a shallow super would be preferable to one of standard type, as it would be more easily kept warm at night.



It is easy to tell the decision arrived at, but I must confess it took many days of close questioning to get at the information I most desired. Bee-keeping here is in its infancy. No one seems to have given it serious thought, as is best illustrated by the fact that I had to find out for myself the actual source of the honey-flow. It was assumed to be clover, but it was not. But more of this later.

The supplies I wanted were not available in the local market, and so an order was placed in Medina. But the season was advancing rapidly, and it was evident the hives could not reach me until too late (as a matter of fact it was July 8 before they came into my possession), so it behooved me to turn carpenter if I was to make any start at all. Luckily for me I had, about eight years before, amused myself one winter working with tools trying to get the fun I missed as a boy, and therefore I was able to make a fairly pretentious attempt at hive-making in an amateur way. In the hope that my experiences may be educative to others I will set them forth in detail.

It has been my good fortune to inspect many workshops and large factories, and I always took considerable interest in whatever technically known as "jigs." A jig is any contrivance that will facilitate the making of an article, and is particularly applied to any arrangement for holding the article while some operation is being performed upon it. For example, when you receive from Medina a lot of frames in the flat, there is included in the case a small bit of wood with a slot cut in it, whose use is to make it easy to get the spacing-staples into the proper position, and to hold them firm while they are being driven into the bars. This is an example of a very simple jig. So while I was making hives I made several jigs; but I want to disclaim any credit for inventing them, as I found most of them scattered throughout the literature of bee-keeping. But in these articles they will be gathered together for convenience. May be I will also refer to some that were highly recommended, that looked well on paper, but, alas! would not work, at least in my hands.

Victoria, B. C., Canada.

*To be continued.*

## EXTRACTED-HONEY PRODUCTION.

### Advantage of a Practical System; Annual Change of Queens to Secure Bees for the Harvest; the Value of Young Queens.

BY F. H. CYRENIUS.

Spring management throughout the white-clover belt is about the same; viz., get the bees for the harvest as early as possible. During my forty years' experience in trying all plans of stimulation, I believe, all things considered, *abundant* stores of *sealed* honey or syrup give the best results.

I will say right here, no doubt we can increase their activity by daily feeding; but after all it is an activity in the wrong direction. The bees are induced to fly in unfavorable weather, and large numbers are lost. I should prefer a plan to keep them at home during the early breeding

season rather than encourage them to fly except for business.

In 1878 the season was considered very unfavorable, as the bees had only about one fly in a week; but at that time mine had plenty of honey, which was rapidly changed into brood. It proved to be a very favorable season for early breeding.

The bees that remained at home reared brood, and were not induced to fly out and die. Right in this connection allow me to call attention to old box hives, unstimulated, undisturbed, but with a good queen and plenty of stores—they outstrip our stimulated colonies every time. Their ambition at this time is to convert as much honey into brood as possible; and any man who thinks he can help them at that time of year by spreading their brood, etc., is making a great mistake.

But now to prepare for our fall honey. In this we must be governed by our locality, and work out our own system. I will speak only for Northern New York, where my white honey fails July 15, and fall honey (buckwheat, goldenrod, aster) yields from Aug. 15 to Sept. 20. This is my principal crop, and I use every effort to get my young queens to laying July 1, to build up for this harvest. I also keep my old queens laying until Aug. 15 to 20, when they are superseded or killed.

Right here I wish to digress a little and outline the season's work. After the bees have a fly in the spring, an examination is made to know whether they have a good supply of honey, etc..

Any weak colonies needing help are united with the strongest that can take care of them, as it is poor policy to unite two weak ones at this time of year.

They will now take care of themselves until fruit bloom, at which time they may be equalized up a little, and from any colonies strong enough to anticipate preparations for swarming I draw half to two-thirds their brood, placing it in an upper story, and filling out both stories with empty comb or foundation, with excluder between and queen below. This gives so much room for the queen and for honey that swarming is not thought of if done in time. However, if the brood be placed in upper chamber in a cold spell, or in a scarcity of honey; some of the very young larvae and eggs may be destroyed by the bees themselves.

The raising of brood is one of my hobbies that I much enjoy. I will call attention to some advantages. If I have queens to introduce I plan to have these upper chambers well filled with brood from one to two weeks ahead of their arrival. I now set this chamber of brood on a new stand and introduce the queens.

There are no queens to look for—they are below. The old bees that would refuse the queen return to the old stand. We also have the advantage of a ten or twelve frame hive.

The plans for the rest of the season are as follows:—

June 1.—Fill at least ten per cent of the chambers of *all* colonies with brood, as before described.

June 5 to 6.—Remove nearly all the brood from the breeders, and fill their place with empty combs in which to procure eggs for starting

queen-cells. Three or four days later these eggs will be just right. Place these prepared chambers on the lower stand after removing the lower hive to one side. This will give rousing colonies in those hopelessly queenless hives.

Now cut out strips of eggs on the Henry Alley plan, and place them in the prepared hives, which should give us all the cells we need, and good ones too. When they are ripe, make a nucleus beside each old hive, and give a cell which should give us a laying queen July 1. Each of these nuclei may be built up or set back on an excluder over the old hive. With the coming of the fall crop the old queen is killed, and the new one takes her place by exchanging chambers, as before mentioned.

My bees have nothing to do from July 15 to Aug. 15, so far as gathering honey is concerned; but I keep up breeding by giving combs of honey from last year's fall honey.

I have said nothing about extracting, as it will be the same as any other plan. Should increase be desired, more nuclei may be formed, or the old queen may be carried over; but I am convinced that, when young queens can be supplied so easily as above, it will pay to supersede every year.

I believe, also, that young active queens stimulate the whole swarm to active work, as old queens do not.

Oswego, N. Y., March 30.

## SELLING HONEY ON COMMISSION.

### Some Actual Figures to Show the Cost.

BY WM. W. CASE.

In reference to the controversy as to prices net and gross for honey shipped and sold on commission, why not publish a few figures, and thus show exactly the net returns that are obtained and should be expected from such sales? In honest packing of honey and honest sales by commission men, there should be no loss of one third, as stated by some, nor of one-fourth or one-fifth either, as stated by others. The loss should never exceed 10 per cent of gross sales, and ought to average below 8 per cent. I have always made it a practice to sell outright, having shipped but two lots for sale on commission, the result of one of which, of 40 cases, is appended to this article. This shipment was received in New York, Dec. 2, 1907, just when the panic was at its worst, and it included all odds and ends left at the close of the selling season, and sold as follows:

16 cases, fancy white (23 lbs. average), at \$3.50,	\$56.00
12 " " No. 1 " (23 " ) at 3.00,	36.00
9 " " " 2 and bkt (22½ lbs. " ) at 2.75,	24.75
3 " " " 3 (18 " ) at 1.60,	4.80

Net wt., 902 lbs.	Gross sales, \$121.55
Freight, \$2.57	
Cartage, .80	
Com., 5 per cent, 6.08	9.45

\$112.10

Average whole lot per cwt. net.....\$12.43

Reduced to grades prices were as follows:

16 cases (368 lbs.) at \$3.50.....	\$56.00
Freight, .....\$1.03	
Cartage, .....32	
Commission.....2.80	4.15

Net.....	\$51.85
Net average cwt.....	\$14.09
12 cases (276 lbs.) at \$3.00.....	\$36.00
Freight.....\$ .77	
Cartage......24	
Commission...1.80	2.81

Net.....	\$33.19
Net average cwt.....	\$12.02
9 cases (204 lbs.) at \$2.75.....	\$24.75
Freight.....\$ .58	
Cartage......18	
Commission...1.24	2.00

Net.....	\$22.75
Net average cwt.....	\$11.16
3 cases (54 lbs.) (culls) at \$1.60.....	\$4.80
Freight.....\$ .19	
Cartage......06	
Commission... .24	.49

Net.....	\$4.31
Net average cwt.....	\$8.00

Now, while the above is somewhat less, probably 2 to 3 cts. per lb., all around than I received on honey, same grades same season sold outright, it is but fair to the parties receiving it, and also to the trade in general, to state that had I shipped the honey when I should have done so, about Oct. 25, instead of Dec. 1, and got in ahead of the panic, which is still seriously felt in the honey market, they would easily have been able to sell each grade at approximately 2 cts. per lb. higher, when the net prices would have been respectively 16, 14, 13, and 10 cents—figures which I think would represent a full normal price on honey properly graded and packed, shipped early in the season, and when a panic does not cover the whole country like a pall.

If a few more will volunteer to publish their private business (which is really *none* of the public's business) I think we shall be able to get much needed light on the commission business.

Frenchtown, N. J., Feb. 25.

## BEE-KEEPERS' INSTITUTES IN NEW YORK.

THE series of bee-keepers' institutes that were held in the State of New York from March 12 to 17 inclusive, at various points, are reported to have been unusually successful. There was a good attendance, and the papers and addresses were interesting and valuable. We possibly may be able to give one or more of them at a later time.

These institutes were held at Utica, March 12; Glen Falls, March 13; Albany, March 15; Gouverneur, March 16 to 17. Speakers from outside the State were employed by the Agricultural Department, as well as local bee-keepers from within.

Probably in no State of the Union are foul and black brood diseases handled more successfully than in New York. At one time, black brood (known as European foul brood) threatened to wipe out the industry entirely. Black brood has cost the State enormously; but owing to the splendid work of the several inspectors the disease is well under control, and the losses, compared with past years, are very light.

The Agricultural Department of New York takes a lively interest in the beekeeping industry, and well it may, for the annual production of honey and wax is not excelled in any other State east of the Mississippi if it is equalled.



## MILLER'S AUTOMATIC DECAPPER.

BY ARTHUR C. MILLER.

The machine for decapping honey-combs, illustrated herewith, is the result of over ten years' effort and experiment. Begun as an amusement, and continued from pique at being balked by a so seemingly simple problem, one step led to another until finally success was attained.

To strip the surface from a fat comb was easy; but to cut the whole surface when within the edges of the frame, and yet not hit the frame, was not so easy. And to devise a machine which would take any style of frame in common use, regardless of the width of the end-bars or length or width of top-bar extensions, or standing or rivet-supported frames, presented a complex problem. When the different lengths and depths of frames were considered, added troubles arose. Then the depth of the cut must be readily controlled.

Many a time the partly developed machine was pushed under the bench and left for weeks or months until some puzzle could be approached from a fresh view-point. Then often the adoption of a plan for accomplishing one thing would

necessitate radical changes in another place, and so it went until the mere thought of the machine began to be painful. But following what is said to be Mr. Carnegie's version of an old saw, "All things come to him who waits if he hustles while he waits," the puzzles were solved.

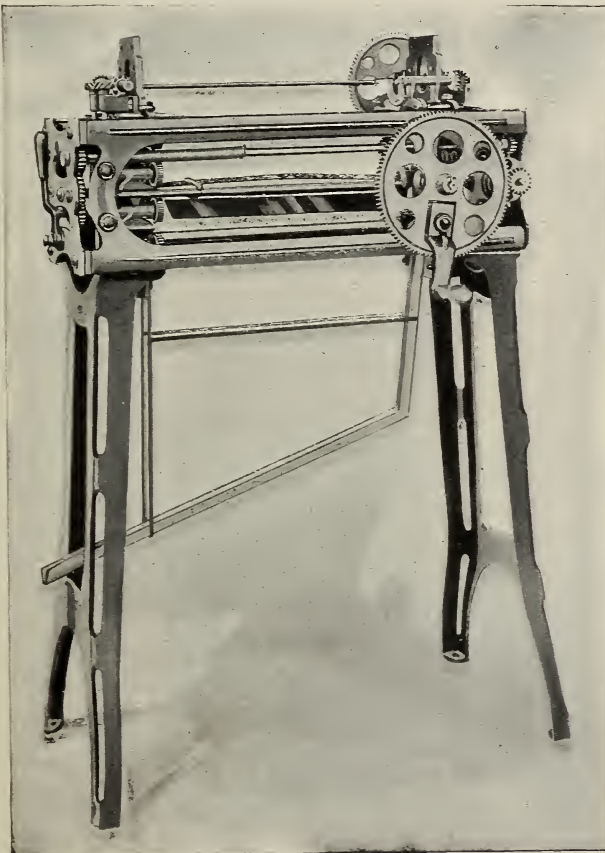
The machine as it now stands takes frames of any size between ten and nineteen inches long, and of any depth up to twenty inches. Depth makes no difference in operation and change of machine, for length is accomplished by loosening two bolts and sliding the adjustable end to the right place. Few bee-keepers have more than one length of frame, and even then seldom in the same apiary.

The cutters are not fastened into the machine, but hang free, and may be lifted out for cleaning or sharpening. They saw back and forth across the two surfaces of the comb as the latter descends between them. By means of a lever at one end of the machine, the depth of the cut is regulated. The pushing of the lever is all that is required to send the cutters to the midrib of the comb or to throw them out of action entirely. When set, all combs are cut alike until the operator changes the set.

Frames are dropped into the machine just as they are into a hive. As the bottom-bar approaches the cutters, the latter open until the bar is by, and at once return to the depth set and cut until the top-bar is reached, when out they go again. It is all automatic, and calls for no attention from the operator. When the comb is finished it drops out into the framework below the cutters. In the illustration this is shown away down as when delivering a frame; but when at rest it is up where it catches the comb without a jolt.

The combs feed through the machine in ratio to the speed of the cutters, so that it is impossible to crowd the combs on to the cutters. Owing to the speed at which the cutters move they do not clog or gum up as does a hand knife; and on account of the relative shortness of the stroke they do not throw the cappings, the latter merely dropping off. Any sort of receptacle may be used to catch them, a metal-lined wooden box being light, durable, and cheap. Capping-melters may be attached, but the writer believes in specializing the work; and to combine wax-refining with honey-harvesting does not appeal to him as either expeditious or economical.

The machine is devised to permit the attachment of a rack to hold ten or more combs at the top, whence they will feed in one after the other, but the one-at-a-time way is considered



MILLER'S AUTOMATIC DECAPPER.

best. Combs in Hoffman L. frames have been decapped on both sides in six seconds, counting from the time the fingers let go the frame until it was delivered below. Such speed is not likely to be kept up for long periods any more than is lightning work with a hand knife.

The machine is designed to be driven by hand, but any other power may be used.

The machines are all of metal, hence there is nothing to shrink, swell, or twist. Accumulation of propolis does not hinder the operation of the machine nor does the accidental dropping of a broken comb into it, as ample clearance is provided wherever needed. As far as possible every contingency has been provided for.

[Along with this came a private note explaining the name "decapper" which we use here.—ED.]

I use the term "decapper," which I believe fits the case better than uncapping-machine. The *decapper* literally *cuts* off the caps, while to *uncap* means getting them off in any old way—literally what the hand knife is usually made to do. But merely as a matter of euphony I prefer "decapper."

Providence, R. I., March 27.

[See editorial reference elsewhere —ED.]

### ORANGE-TREES.

#### Their Introduction into this Country; Their Nectar-bearing Value.

BY W. A. PRYAL.

The orange is probably the most attractive as well as the most interesting nectar-secreting tree grown in the United States. It calls forth admiration on account of its remarkable growth—loaded with fruit in various stages of development, and in bud and blossom all at the same time. Its blossom, though comparatively small, is pretty, and wonderfully fragrant, and, like the lily, it may be said to be a symbol of purity, and perhaps for this reason more than any other it is the favorite flower of young brides. The fruit, of

late years, owing to improved varieties, is much sought, and, on account of its peculiar salts and medicinal properties, is very healthful. The consumption of this fruit in the United States has progressed amazingly. Thirty years ago our supply came from foreign countries, while to-day it is almost all home-grown.

There are three well-defined orange regions in this country; namely, Florida, the Mississippi-delta region, and California. Arizona and Texas may be regarded as another region if they can not be classed with California.

It is said this fruit was one of the first brought to this country by the very early settlers, Florida being its first home. Indians, no doubt, scattered the seed, so that orange-groves were common in Florida for a century or more before 1865. It was not until after the close of the civil war that attention was attracted to the fruit commercially. The advent of the navel variety, which was introduced from Brazil by the Agricultural Department, in 1880, marked the beginning of the growth of a great industry in Florida and California. It was in the '80's that the planting spread like wild fire. It had risen to a high point in Florida when it met a stunning blow by the big frost of 1894-5. I believe it has now recovered from that shock.

In California the introduction of the orange dates from the coming of the missionary padres—the progenitors of religion, civilization, and horticulture in the golden West. The first varieties were of inferior sorts. The citrus belt of California extends from the southernmost point well toward the north, a distance of some seven hundred miles, and from the ocean to the foothills of the Sierra Nevadas. The oranges of California, especially the foothill regions, are more hardy than those of Florida, and can stand a freeze that would put the fruit-trees of the southern State out of commission. And, strange as it may seem, these oranges are not only sweeter but earlier than those from the more evenly temperate climate.

Owing to the large acreage of oranges and lemons grown in California, and owing, also, to their richness in nectar, they are an excellent

forage for the bees. If it were not for the fact that this fruit blooms almost entirely during the winter there would be large crops of this honey placed upon the market. As it is, most of the honey so gathered is used for the bees in brood-rearing. Where the period of inflorescence is prolonged into spring, and the colonies have built up strong



ORANGE-BLOSSOMS.





FRUIT-BLOOMING TIME IN THE APIARY OF R. BEUHN, TOOBORAC, VICT., AUSTRALIA.

in bees early, then there is a surplus that can be harvested. I am told by those who have taken considerable of this honey that it is of fine body and excellent quality. While we have the trees growing on our place, and they are to be found in the surrounding gardens, still there are not enough of them to make any perceptible showing in the increase of our honey-supply.

The half-tone here shown was made from a photograph of flowers grown on our place. The variety is of an ornamental sort, but it is a rich nectar-yielding kind, and blooms in mid-winter. The bee-keeper who has an apiary located near an orange-grove is to be considered fortunate. He is well in line to have strong colonies for the main harvest, even if he does not harvest a goodly quantity of "orange-blossom honey," a title the fruit-canners conjured with a quarter of a century ago when they placed a doubtful quality of honey upon the market.

Oakland, Cal.

[While the orange-tree is not a prolific source of nectar, it furnishes in some sections a very fine honey. As a general thing it is hard to get a strictly all-orange-blossom honey.—Ed.]

## SUPERANNUATED QUEENS.

BY R. BEUHNE.

In a Straw, October 15, last year, Dr. Miller asks whether I meant that an old queen is more readily accepted than a younger one. Yes, I did mean it; but I am not sure now that I had sufficient reasons. I have introduced these three-year-old queens into colonies and nuclei within a few hours of removing another queen, and always successfully. But when I come to think of it, I have lost only one laying queen in introducing in three years, and that was when another

young laying queen was in the hive and I was not aware of it; so it might not be due to old age that they are readily accepted, but to the temper of the bees. I don't think that suffering two queens in a hive is due to any thing in the strain of bees, for I have done exactly the same with nonedescript bees which I bought, and after removing their own queens and giving them three-year olds, and a queen-cell next, I had two queens in them before any of the worker bees of my queens had hatched.

Dr. Miller is not sure, page 1205, Oct. 1, 1908, whether I practice mating queens from full colonies with old queens only or from nuclei as well.

Well, I do both. Up to a certain time in spring any queen, almost, lays as many eggs as the bees can raise. A little further on the workers could raise more brood than the capacity of some of the old queens will allow if she were not shifted to a nucleus when or before that point is reached. As I replace queens continually, regardless of age if they are not up to standard, only the best ever reach the age of three or over, and quite a large percentage of these three-year-old queens are as good as any queens in the apiary. These I leave in full colonies, giving a cell and removing a young laying queen whenever possible, or letting their colonies do the cell-raising. Those which show signs of decreasing prolificness I shift into nuclei after the young queen from a cell given is laying. I had quite a number of two-queen colonies this season, and a few with three. Lately I have shifted nearly all the old queens from these hives into nuclei from which the queens had been removed to fill orders, and could not be replaced by cells, owing to conditions being unfavorable to queen-raising for a time in consequence of a dearth of pollen. In former years I used to have trouble with queenless nuclei getting robbed and virgin queens balled when hatching or being introduced about

that time. Now with an old queen permanently in the nucleus the bees do not become demoralized by the removal of the young laying queen, and the nucleus remains fresh, as Dr. Miller calls it; in fact, I am occasionally obliged to remove a comb of brood to prevent its getting too crowded.

In regard to Dr. Miller's case of No. 42 hive, page 1205, I had several similar cases some years ago, where a colony would raise a cell and kill the young queen (or did the old queen do it?) and then immediately afterward they would raise another cell, and the young queen would again disappear. Twice I found the virgin queen dead in front of the hive, and the mauled appearance suggested that it was the work of the bees and not of the queen; but it may have been bees from other hives which entered the wrong hive returning from the fields, and, having a young laying queen in their own rightful home, objected to a virgin. I am sure that bees mix far more than many bee-keepers think.

One strain of golden Italians which I had years ago were particularly bad locaters, and I could find some of them in almost every hive in the apiary, while there were very few of the other bees among the goldens. When I raised queens of this strain I always had trouble with virgins returning to the wrong hive, and I went to some trouble to mark their hives conspicuously. Some of these virgins entering the wrong hive were accepted with the loss of the former queen. Since going out of this strain I have had almost no straying of virgins; and as I do not now mark the hives, the loss in mating-flights, for several seasons, is not more than three out of a hundred.

This spring I found the first case of young and old queen going through the winter together, although I had one case of two old ones wintering on the same combs before.

Tooborac, Vict., Australia.

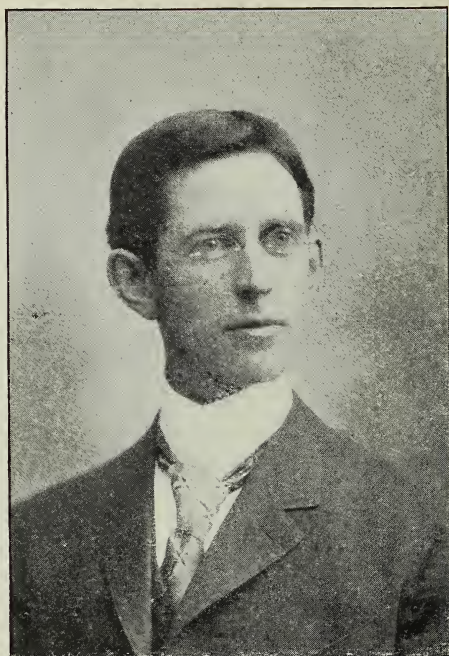
## ONTARIO PROGRESSING APICULTURALLY.

### The Jordan Harbor Apicultural Station to Be Established at Once.

BY R. F. HOLTERMANN.

The Ontario Apicultural Station, which was foreshadowed in GLEANINGS some time ago, is to be a reality at once. Mr. Morley Pettit, Nixon, Ontario, well known to the bee-keeping fraternity, has been appointed. He will be Provincial Apiarist, having charge of the experimental apiary at Jordan Harbor, and he will be the lecturer at the Ontario Agricultural College, Guelph, and inspector of apiaries in the counties given below.

Mr. Pettit is the youngest son of S. T. Pettit, formerly of Belmont, now living retired at Aylmer West, Ont. Mr. S. T. Pettit's apicultural activities were mostly carried on from Belmont, Ont., and he will be best remembered in connection with that address. Morley Pettit will probably hold the record as to a season's profits from an apiary, having cleared some \$1200 from 69 colonies in one year. He has, therefore, had good apicultural training in his boyhood. He



MORLEY PETTIT, AYLMEER, ONT., CAN.

Mr. Pettit has recently been appointed to the position of Provincial Apiarist at the Ontario Agricultural Station.

has a first-class certificate as a schoolteacher, and an extensive experience as a bee-keeper himself, all of which, focused upon the work in which he is now to engage, should bring to the apicultural world something worth knowing. It is to be hoped (and I believe it will be the case) that the Ontario government will not be slack or slow in supplying needed equipment.

The Hon. Minister of Agriculture, Mr. Duff, represents Simcoe Co. in the Legislature. This is a county of great apicultural activity, having in it men of progressive ideas. In our gratitude to Mr. Duff, and in hopefully looking forward to the future, it will do no one an injustice to state that the decision to establish the Jordan Apicultural Station was one of the last acts of the Hon. Nelson Monteith, and bee-keepers will not be likely to forget that in this act, in the providing of lecturers at county meetings, and in an increase from \$600 to \$2500 for the stamping-out of foul brood, Mr. Monteith has broken away from a rut into which Ontario apiculture had fallen. The inspectors for Ontario are as follows. The grant for the year is \$2500.

#### DISTRICTS.

1. J. S. Schrank, Port Elgin, Ont.; counties of Bruce and Huron.
2. D. Chalmers, Pool, Ont.; Perth and Waterloo.
3. W. A. Chrysler, Chatham, Ont.; Lambton, Kent, Essex.
4. John Newton, Thamesford, Ont.; Middlesex, Elgin.
5. James Armstrong, Chapside; North and South Norfolk, North and South Oxford.
6. Jacob Alpaugh, Eden, Ont.; Wellington, Grey.
7. H. G. Sibbald, Claude, Ont.; Simcoe, Dufferin, Peel.
8. Morley Pettit, Nixon, Ont.; Brant, Wentworth, Halton, Haldemund, Lincoln, Welland.



9. J. L. Byer, Mt. Joy, Ont.; Ontario, York, Victoria, Durham.  
 10. Warrington Scott, Wooler, Ont.; Peterboro, Northumberland, Hastings, Prince Edward.  
 11. A. A. Ferrier, Renfrew, Ont.; Renfrew, Lanark, Carleton.  
 12. D. L. McNaughton, St. Raphael, West, Ont.; Russel, Prescott, Glengarry.  
 13. M. B. Holmes, Athens, Ont.; Lenox, Addington, Frontenac, Leeds.  
 14. Homer Burke, Highland Creek, Ont.; Grenville, Dundas, Cornwall.

## SHIPPING-CASES OF CORRUGATED PAPER.

**A Lighter, Stronger, Cheaper Case than One Made of Wood; How to Avoid all Loss of Comb Honey by Breakage.**

BY J. E. CRANE.

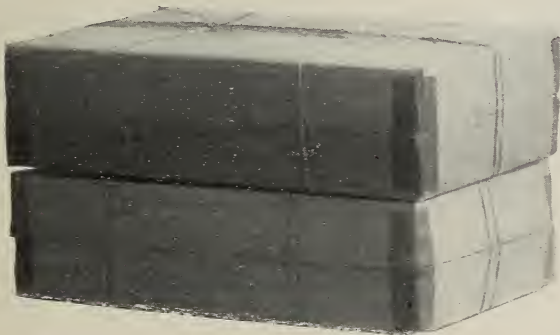
Some three or four years ago we began selling honey direct to retail dealers and consumers. One of the first things that we learned was the necessity of getting our goods to our customers without breakage—especially comb honey shipped in small wooden cases. To be sure, we could pack two or three or more of these cases in a larger box protected by straw or excelsior; but this increased the cost of packing as well as the

freight—bills, to say nothing of the large amount of extra work—unnecessary work it seemed to us. If some sort of case could be made, not too expensive, that would carry comb honey with comparative safety, it seemed to me it would be a decided improvement.

For several years I had noticed that corrugated paper was somewhat elastic, and we began using it in the bottom

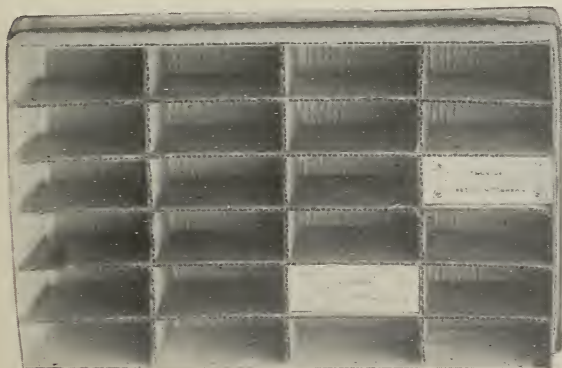


NO AMOUNT OF POUNDING ON THE FLAT SIDE INJURES THE HONEY.



CRANE'S CORRUGATED-PAPER SHIPPING-CASES.

A rectangular frame is completely covered by the telescoping top and bottom which meet in the middle. The inside is divided by cross-pieces as shown below.



INSIDE OF CRANE'S CORRUGATED-PAPER SHIPPING-CASE.

It has been found that comb honey can be shipped in these cases, practically without breakage.

of our wooden cases, and later, to some extent, with cellular-paper partitions. These were illustrated and described in GLEANINGS for December 15, 1905; but they did not satisfy me, as I had a strong desire for something with sufficient resiliency to carry comb honey as safely as when packed in extra cases with hay or straw, for I had found a wooden case quite too rigid, even when lined with cellular paper, to say nothing of the extra expense. A few months later, when in Boston I found that Blake, Scott & Lee were shipping out single cases of honey packed in a crate of hay to prevent breakage, and for this the purchasers were paying 10 cts. extra. I found later, when in New York, that extra cases were being used for the same purpose also.

After a good deal of study I made up my mind that nothing was likely to prove more satisfactory than a complete case of cellular paper provided one could be made strong enough to stand up under the weight of honey it would have to carry and the rough usage it would get. After studying over the sub-

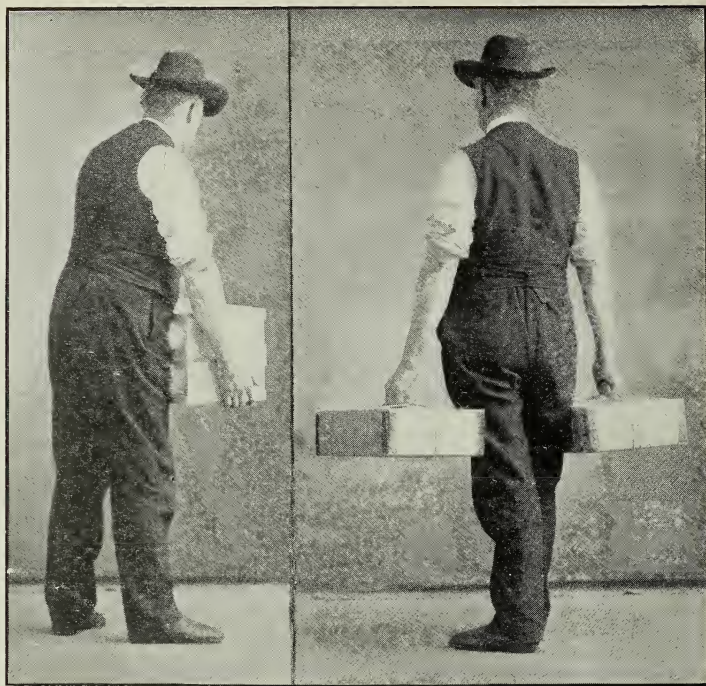
ject for several months I had what seemed to me a very satisfactory case, at least in theory. Whether it would be practical could be told only by trying it on a somewhat extensive scale. We ordered some 500 of these cases made for shipping a part of our honey crop for 1906.

I may as well say right here that the case consists of a rectangular frame of cellular board with corrugated straw-board partitions. These are covered with a top and bottom, both having telescoping sides and ends that fit over the rectangular frame, and that nearly or quite meet in the middle. A sheet of single-faced cellular board, to lay on the bottom to catch any drip from the sections above, and to cushion them, completes the case.

I confess I had a good many misgivings when I came to use them. Many things are beautiful in theory but they fail in practice. My misgivings were somewhat allayed when, at the beginning of the packing season, one of our men let a case drop from a table, nearly three feet high, to the floor, without injury to a single comb.

There were some other things that still bothered me. The sides of the cover and bottom stuck out somewhat so that the case did not look as trim as the wooden cases. I soon found, however, that these were an advantage, as they acted as springs or buffers, breaking any blows that might come against them. I was also afraid and troubled, lest, being of paper, they could not be piled one on top of another ten or twelve deep as we tier up wooden cases; but I found that in this I was also mistaken, for an empty case would hold up a heavy man, even if he let his weight come on to the toes of one foot, which indicates that the whole case would hold up one or two tons if the weight were evenly distributed over the surface of the top of the case. The top rests on the partitions; and while they support the top they also brace the ends and sides, making the case very secure. These partitions come  $\frac{1}{2}$  inch or more above the sections, thus protecting the top of the sections perfectly.

Another thing that I was not at first satisfied with was that each case had to be tied up with twine or cord, but I found this was an advantage also, as, when piled one on top of another in a car, they do not slip and slide over each other, and will stay where they are put much better



IT IS MUCH EASIER TO CARRY THE NEW-STYLE SHIPPING-CASES THAN THE OLD.

than wooden cases, as it is difficult for one twine to pass another. I have found ordinary binding-twine strong enough for this purpose, and not expensive.

It will be seen from the above description that each comb is well cushioned by partitions on both sides and ends, and on the bottom with an extra board, and the sides and ends of the case with the strong and somewhat flaring flanges of the top and bottom.

It might be said further, as to these compartments or cells for each comb, that if a man falls to the ground he may get hurt; but if he should have three or four men on his back as heavy as himself the chances of his getting hurt would be largely increased. It is also easy to see that each partition and compartment helps to break the force of a blow or the effects of a jar.

I have spoken of how one of these cases protects the combs contained in it during a fall of nearly three feet. Later in the season a wooden case filled with combs was dropped some eighteen inches, and every comb but two was broken. How our experiment with 500 paper cases without a square inch of wood in the whole lot came out is best told by those who received them.

Early in the season we shipped ten of these paper cases, with a lot of wooden ones, to H. B. Phillips, Auburn, Maine. This was over a route where they would have to be transferred one or more times from one car to another. Mr. Phillips wrote, soon after receiving them, that he found one or more broken combs in every wooden case, but not a single broken comb in any of the ten paper cases. We quote the following



from a letter received from him a little later in the season:

I am glad to know you intend to use the corrugated strawboard cases for comb honey next season, for, as I wrote you some time ago, the honey that you sent me in these cases came through all O. K., while that in wooden cases was more or less damaged. These corrugated-strawboard cases for comb honey are far different from anything I ever saw, heard, or read of in all my twenty years' experience with bees and honey. They are surely quite unique, and I venture to predict they will work a revolution in shipping-packages for this most fragile and delicate of sweets—comb honey.

The following is from a jobber, Mr. G. M. Perkins, of Lowell, Mass., where we have found it almost impossible to ship single wooden cases without breakage, and have been compelled to use heavy carriers. He says:

I think the strawboard honey-case far ahead of the old wooden case. I should say it did away with 90 per cent of the breakage.

The latter part of the summer we shipped to the Holbrook-Marshall Co., of Nashua, N. H., if I remember rightly, 100 cases of corrugated-paper honey. Later they ordered 100 cases more, and we filled the order with honey packed in wooden cases. Both lots were shipped over a road where it had to be transferred from one car to another *en route*. Later we received the following letter:

*J. E. Crane & Son*.—When you ship us the next lot of honey we hope you will be able to put the comb in pasteboard carriers instead of wood. We introduced this style of package to our customers, and they were pleased with it. What we have shipped from the last lot received from you has arrived at destination in bad order, and we have had numerous complaints and claims for breakage from parties who received it.

THE HOLBROOK-MARSHALL CO.

Nashua, N. H., Oct. 30, 1906.

We wrote them at once, saying that we would be unable to ship them any more honey packed in paper cases, but could supply them with honey in the ordinary wooden shipping-cases. Later we received the following:

*J. E. Crane & Son*.—In explanation of our letter of Nov. 2 to you we would say that the meaning we wished to convey was as follows: That we note in your letter of Oct. 31 to us that you will be unable to ship comb honey in corrugated-paper carriers. We are all the time receiving complaints from our customers when we ship them comb honey packed in wooden carriers. As we shall be unable to ship comb honey out of town we are obliged to ask you to change our order for comb honey to twenty-five packages.

THE HOLBROOK-MARSHALL CO.

Nashua, N. H., Nov. 5, 1906.

Again we wrote this company expressing our surprise that they should cut down their order to 25 cases just because our honey was in wooden cases, such as we had used for a score of years, and received a long letter from them from which we quote the following:

Undoubtedly you fail to realize the fact that the honey we ship out from our warehouse is damaged in transit, and claims are made by receivers. Doubtless you noted what Mr. F. E. Poore, of Manchester, wrote us. You could not expect us to buy your comb honey and ship it out and stand the claims; for if we paid all these claims the comb-honey business would net us a loss. As we wrote you before, the strawboard cases were very satisfactory, and no claims for breakage were made; and the only reason why we asked you to change our order to twenty-five cases is that we shall be unable to ship out of the city comb honey packed in the cases you are now shipping out, and could not handle 100 cases of comb honey here in the city.

They were too "foxy." They would not buy a large lot of honey in wooden cases after having once used the corrugated-paper cases.

Here is what Mr. F. H. Poore says:

*Gentlemen*.—We are sorry to report twelve packages of comb honey broken out in the lot of five cases. Do I have to stand that, or do you charge it back to Messrs. J. E. Crane & Son? I should claim a discount of only 10 cents each, as I can get someone for them.

F. H. POORE.

Manchester, N. H., Oct. 29, 1906.

Mr. Poore's honey was in wooden cases.

Here is a letter from another grocery firm who received their honey in paper cases that is all sunshine and sweetness:

*J. E. Crane & Son*.—We have used your honey for several years, and have never in our thirteen years' experience seen any to surpass it in excellence of flavor. We have always, however, had more or less trouble from the combs getting broken in transit. Last year some thirty in our five-case lot were broken. This year, however, out of a ten-case lot we have not found a broken section. The only way the writer can account for the excellent shape in which it was received is the cellular package in which it was shipped. The package was a new idea to me, and yet so simple I wonder some one had not thought of it before. It surely is the common-sense package for honey.

Bellevue Falls, Vt., Dec. 4, 1906.

E. C. FAIRBANKS.

No wonder Mr. Fairbanks thought our honey of surpassing flavor after receiving it without a single broken comb.

About this time we came to the conclusion that our experiment was a success, and that paper cases were not only as good as wooden ones, but on many accounts very much to be preferred. Not only does it carry honey very much more safely but cheaper. They weigh only half as much as wooden cases, thus saving freight. If we use special carriers and wooden cases the extra cost with extra freight and labor of packing nearly doubles the cost of shipping the honey; and, even when shipped in special carriers, when sent out by the wholesale dealers it is likely to be sent out in small lots, and the carrier is of no value for this purpose. Honey in paper cases is likely to sell for better prices than in wooden cases. We shall not hesitate to ask five or ten cents a case more another year for honey put up in paper cases, and have no fear but that we can get it as soon as dealers become acquainted with it. If put up in paper cases it is in greater demand, and higher prices may be expected after a while.

The above was written two years ago, thinking we might want to place the cases on the market at once. We have delayed doing so, and during this time have made the most exhaustive tests with a view to making any possible improvements. The longer we use them the firmer becomes our belief that they are as near perfect as it is possible to get them. The only change we have in view is the substitution of paper tape of stickers for sealing the cases instead of tying them with twine.

We have now shipped some 1300 cases, containing approximately 30,000 pounds of honey. During the last two years we have made a charge of 5 cts. extra where packed in this style of case. Not only are the jobbers willing to pay this extra charge, but they have demanded far more honey than we were able to supply. Honey we have bought in wooden cases has, as a rule, been shipped in them, although in some instances we have been obliged to transfer the honey to the paper cases. Where we did not transfer it we found it necessary to use extra boxes with excelsior packing. As soon as the merits of these cases become known, there is reason to believe that honey shipped in them will bring from a half to one cent per pound more than in wooden cases. One jobber has, during the past season, positively refused to handle comb honey in any but the paper cases. Recently we received a letter from a Boston wholesaler in which he speaks of the cases as follows:



We have no words but praise in speaking of it. The honey reached us in perfect condition. Examination failed to reveal a single comb that was broken. As you know, we ship this honey over all New England, and wherever it has gone we find the same words of praise for the package, and that it accomplishes all its claims. To show you how strongly some people feel about it, one of our customers would not make a purchase of honey after we exhausted the supply unless we would give it in that particular form of package, which we were unable to do. This refusal was entirely due to the package, as he did not hesitate to purchase before, and he dwelt entirely on the fact that, whereas previous shipments had invariably reached him in bad condition, this particular crate had reached him in perfect order. We can not say any thing stronger than this.

From the enclosed photos the great strength of these cases can be seen. The partitions meeting the sides, ends, top, and bottom, and the double thick ends, sides, and bottom, with a space between the sections and top, makes breakage almost impossible, by twisting, stepping on them, or even dropping them.

To assist in introducing them we have applied for a patent, which we have reason to believe will soon be allowed.

Middlebury, Vt., March 15.

[We are frank to state that, in our opinion, we have something here that may supplant the wooden shipping-case entirely. Natural conservatism on the part of bee-keepers will prevent many from trying the strawboard case until they hear how it works with others.

We have samples of this new case in our office, and it is very evident to us that honey can be shipped in them much more safely than in the ordinary wooden cases, although these latter, with corrugated bottoms in the single tier, and corrugated bottoms in the double tier, and a sheet between the upper and lower sections, will reduce the breakage to a considerable extent. We shall see, because we have a whole season before us.—Ed.]

#### IN MEMORIAM OF E. L. PRATT.

#### His Life, and Contribution to Bee-keeping.

BY W. K. MORRISON.

The subject of this sketch was born at Middleboro, Mass., March 14, 1864, so that he was just forty-five years of age when he died. His father was a versatile editor and journalist in the old Bay State, and his son inherited some of his talent; for up to the day of his death he published a weekly local paper at Swarthmore, Pa., where he resided for the past sixteen years.

Mr. Pratt's father took some interest in natural history, and gave his boys considerable instruc-



J. H. HOOKER AND E. L. PRATT TALKING BEES.

[They were sitting in a shady nook in the Pratt queen-rearing yard, where the camera caught them. Mr. Hooker, who has since died, was a prominent English writer, an intimate friend of such men as Thomas William Cowan and Frank Cheshire, and himself an authority on bees. It was he who told me, after many interviews with Mr. Pratt, that he (Pratt) knew bee nature as few men did, and that he regarded him as possibly the most expert queen-breeder in the world.

Mr. Hooker, at the time, was residing in Philadelphia with a relative. He used to take the trolley every now and then for Swarthmore, and call on Mr. Pratt. The scene here shown was a very familiar one. It is a pity that we can not reproduce some of those "conversations," for they related to some interesting things about bees and queens.—E. R. ROOT.



tion therein, so that, when he came under the personal instruction of Mr. Henry Alley, the veteran bee-master, he at once became a loyal disciple and an enthusiast in all that pertained to bee culture.

To show his high appreciation of his teacher, when he recently advanced the theory that a portion of the abdomen of the bee secretes a fluid which emits an odor to attract other bees to the entrance of the hive and to aid them in finding their home and in swarming time, he termed this organ "Beverly," in honor of Mr. Alley's home town.

Mr. Pratt soon learned all the details of the Alley system of queen-rearing, and, naturally enough, tried to improve on it, though his teacher would not always admit the inventive genius of his pupil. In this instance the schoolmaster was rather jealous of the ability of his scholar, though in after years he was glad to admit the brilliancy of his disciple.

He did not rest content with following blindly the system of his teacher, but early evinced a tendency to improve on it. This he continued during the whole of his career as a bee-keeper, and hardly a season passed without his discovery of some new idea or plan for the improvement of his system of queen-breeding.

Some of his plans were held by many to be impractical and visionary, but he could make them work readily enough. In fact, Mr. Pratt was such a past master in the art of rearing queens that what was easy for him was difficult for others to do. His critics did not sufficiently allow for this. He was no amateur.

The eastern coast of Massachusetts is not the very best place in the world for a queen-breeder, and some sixteen years ago he moved his apiary to Swarthmore, Pa., a suburb of Philadelphia, where he continued to the end. Here he developed and rounded out his system of queen culture.

One of his signal achievements was the invention of "baby nuclei," for which he was much criticised. His idea was to render the work of queen fertilization much cheaper by using a tea-cupful of bees instead of a two-frame nucleus. He undoubtedly succeeded. This was due to his consummate knowledge of bee life and habits. He seldom allowed for the fact that other breeders with a limited experience were not so advanced in bee knowledge, and consequently they dubbed his "baby nuclei" a failure, whereas these succeeded admirably in his own yard.

On nearly all of Mr. Alley's inventions he made improvements or alterations calculated to advance the art of queen-breeding. For example, take the portable swarm-box, a sort of up-to-date twentieth-century invention. Here is his description of it:

Build a neat light hive-body to hold just five frames; cover the bottom of your box with wire netting nailed on firmly with cleats all round. Now provide a lid of thin stuff that will just fit the top of the swarm-box; cleat it well and provide means for fastening this cover. Bore an inch hole at one end of the box, low down, for an entrance, and provide a cork or a button of section stuff for the purpose of speed in opening and closing the entrance.

This box may then be used on the same plan as outlined above, and you will have something that can be conveniently carried on street or steam cars—just like a suit-case.

Shake your bees in the morning, and at evening run in the queen. After dark throw a strap or cord around the box; board a car with it and set it out one mile away. Draw the cork from the flight-hole and catch the next car home.

When you take out another boxful, bring home the one form-

ed a few days before, and so on. In this manner two boxes will keep you going with all the increase you can take care of.

The foregoing is an excellent sample of Mr. Pratt's style and his methods—short, quick, and concise. Of course, he supposed his readers would be well informed on the subject of bees; but in many cases this was far from being so. To him every thing he described was easy. He believed in short cuts. He could not very well help this, for he was born not very far from Cape Cod, where the genuine Yankees originate. His head was a seething mass of new ideas that were continually finding concrete expression in some sort of invention.

His wooden cell-cups are *Yankee* enough, but he went beyond that and made the queen lay in them—in spite of herself. Queens lay in queen-cells only when the colony is possessed of the swarming fever, and when the welfare of the bees is at the highest pitch. But he went further, and by a stroke of New England economical genius used the same cells over and over again. A Californian who despises copper cents can't understand this sort of economy. But it requires genius to do it.

Here he showed his schooling under Mr. Alley, for the latter never practiced "grafting," for two reasons; first, the cost and bother of making wax cups; and, second, the undoubted fact that the little larva never suffers for a moment for want of pap if natural cells are used, whereas they do when "grafting" is done. No matter what critics may say, it was certainly a great achievement when Mr. Pratt invented his plan for making queens lay in cell-cups, and these easily removable, one at a time. It marked another mile in the progress of queen-breeding. Coming generations will appreciate it more than we do. There are great possibilities in it.

To acquaint the bee-keeping world with his work, Mr. Pratt, under the *nom de plume* of "Swarthmore," issued a number of short monographs on various subjects connected with queen-rearing. The principal ones are "Baby Nuclei," "Increase," "Cell Getting," and "Forcing the Breeding Queen to Lay in Cell Cups." Gradually his work became known in foreign lands, and these works were translated into various European languages, more particularly French, German, Scandinavian, Dutch, Italian, and Russian.

If imitation is flattery, then he was well flattered by our foreign brethren of the craft, and there arose in consequence a new interest in Europe in all that pertained to bee-breeding.

The climax came when the bee-keepers' Centralverein of Austria invited him to go to Vienna (with all expenses paid), to be their guest of honor at a great meeting held in connection with the diamond jubilee of the Emperor Francis Joseph. Mr. Pratt went in response to this invitation, where he was feted and dined by the enthusiastic bee-keepers of Austria. He was introduced by Mr. Alois Alfonsus, the editor of the leading bee journal of Austria, and author of a handsome work on bees and bee-keeping. He entertained them with practical demonstrations of his work, and showed them his beautiful golden-all-over Italian bees, with which they were delighted.

On February 14th the Centralverein of Austria unanimously elected him an honorary member—

the only American so honored. That crowned his career—at its close.

He left a mourning widow and daughter who have the sympathy of GLEANINGS readers. His death was unexpected, as he was in the prime of life. He was caught with a sudden chill on the street, and was carried to the hospital, where the doctors said he had a complication of pleurisy and the grip. This developed into pneumonia, and he expired in less than a week from the time he was taken ill.

His demise is a loss to American bee-keeping.

## USEFUL HINTS IN BEE MANAGEMENT.

BY E. L. PRATT.

[Shortly before Mr. Pratt's death he had prepared some short notes on management. He had furnished two or three installments, and had expected to furnish more. We present the first at this time. The "hint" on how to cure a case of spring dwindling will be very timely just now. It looks as if it might work.—Ed.]

To stop spring dwindling, and to save a colony in its last stages, proceed as follows: Capture the queen and introduce her, as explained in my book called "Increase," to a fair shake of fresh bees taken from one or more strong and healthy colonies. If the weather is yet quite cool, remove the swarm-box to the house, where it is comfortable. The queen may be safely run into the box after an hour or two of confinement. After two or three days' more confinement, either put the little swarm into the old hive, if clean, or set the box on the old stand and shake any remaining bees into the box. If one comb of mainly sealed brood is given to such colonies it will help them wonderfully in strength and vigor just at the time they most need the assistance. With a division-board, crowd them down to the number of combs they can fairly well cover.

If a colony is found in weak condition after the winter's siege is really over, it is a very simple matter to change stands with some overpopulous stock near by, and thus bring the weak colony at once up to working strength. At this season of the year strange bees are admitted to a weak colony, and there is very little danger of the queen being balled by the aliens.

Good rules to follow at all times are these: Don't place your bees in positions that would be intolerable to yourself. Too much disturbance to one's colonies is ruinous to their future prospects. If a colony is doing well, let it alone.

Bees are almost human in many things. They have the same tendency to pilfer, just as apt to "do" a neighbor, eager for stores, etc.

Shape your daily work in the apiary so that, when you quit for the season, your bees will be ready for winter.

A new swarm is totally inoffensive for several days after hiving. To smoke such a colony during wax secretion is cruel. To manipulate extensively a new swarm is the height of folly.

At one of our apiaries the bees work on what is called the "yellow flower," which grows in profusion some five miles away. This flower yields heavily, and after a few days the bees establish a bee-line. This line is laid in a cer-

tain direction each year every day during the flow, and people living on the line of flight frequently call my attention to the roar the bees make over their houses in going and coming to this field. The bees fly quite high during pleasant days; but if the day turns hazy they lower their line so that one can distinctly observe them in their mad flight. On such days there is a strong scent left in the trail, much akin to the scent from the flower they are at work upon. This scent, I believe, acts as a guide to the very young bees, which pile out like mad, and seem to work as vigorously as the old field bees as soon as the bee-line has become established from apiary to field. This would indicate that a colony will at times send out its entire flying force to help gather in the sweets which have been previously located by the older workers. I have noticed that, if the day turns a little cool, or if clouds threaten, the young bees cease flying, while the old field bees carry on the work.

In early spring, while cool winds yet prevail, the bees of an apiary will frequently establish a line of flight to the fields along the sheltered sides of fences, hedges, woods, and side hills. At such time they naturally fly low. Their trips are shorter and more frequent than in warmer weather. It is interesting to discover the line of flight of an apiary and watch the bees maneuver. It is a key to what is doing in the entire yard.

### HOW TO TREAT A COLONY OF LOAFERS.

How to treat profitably a hanging-out loafing colony has always puzzled bee-keepers. A sulky colony is of no real value so long as the bees continue to sulk. They frequently wind up the season with empty combs, and are, therefore, an expense rather than a profit to the yard. I will briefly outline a treatment for loafing colonies, which I have practiced with profit for a number of years: First make sure that your colony is really sulking—that is, healthy yet not at work, while all the others are piling in and out with honey and pollen. When assured on this point, set a hive containing empty combs down close beside the hangers-out in such a way that the bees will cluster and hang over on the new hive directly over and into the entrance. After a few days, thus cage a young and vigorous laying queen, with attendants, and place this cage down between the combs of the new hive at a point where the bees from the loafing colony have taken loafing quarters. If warm, the cage may be shoved into the entrance. After a day or two, give the loafers access to the candy plug in the cage, and in due time they will release the confined queen. Watch the colony from the outside; and when you see that the bees have started off to field to a noticeable extent, make examination of the new colony and note condition. If brood or even eggs are found in a small patch in any of the new combs, all will be well; if found short of honey, give a comb containing sealed honey or feed and close. Let the bees work on for a few days, then gradually move the old colony away so as to force more bees to enter the new hive.

If you desire increase of colonies, change the queen in the old hive at your leisure. If you do not desire increase, dispose of the old queen; and after a day or two of queenlessness set the old hive on top of the new one, omitting a zinc hon-



ey-board, in order that the young queen may enter the chamber and destroy the queen-cells which may have been started. Replace the honey-board later, and confine the queen to the lower chamber as usual; then, as the brood hatches from the super, honey will take its place. It may be well for me to say that this plan may be used to secure gradual increase without manipulation. I need not point out the saving in labor over some of the plans of increase advocated. It is slow, to be sure, but quite satisfactory in results.

Swarthmore, Pa.

### SEALED COVERS PREFERRED.

#### Faulty Packing the Cause of Ice Under Mr. Coggs's Sealed Covers.

BY G. C. GREINER.

Mr. Coggs's description of the quantities of ice he found in his hives was at first a great surprise to me; but since I have looked the matter over a little closer it all seems very plain. I do not wish to dispute Mr. C.'s statement in any way. I simply wish to give my experience in that line, and tell what I have seen and what I have not seen.

For about ten years I have wintered my bees on their summer stands. They are packed in what might be called tenement winter cases, or sheds, holding five colonies each, with three inches of chaff on the sides, and six inches above their sealed covers. The cases are all made of matched lumber, and in workmanlike style. Although made in sections and hooked together they are practically air-tight. The roof slants back at one-quarter pitch, and is covered with roofing-paper well painted with tar paint, making it positively water-proof.

Hives protected in this way are, in my opinion, not only water-proof from without but they are also frost and ice proof within—at least I have never seen the first sign of either. To be sure, I very seldom disturb the sealed covers of any of my bees for the purpose of investigating the ice question; but during the winter I frequently raise the roof, which can be done without the least jarring, and run my hand through the chaff until I reach the covers; and these I find invariably, in spite of all the zero or below zero weather we have in this locality, quite warm. This could not be so if any ice had formed on the under side of them.

In my mind the solution of Mr. C.'s ice trouble is simply this: His hives were not properly protected against the rigor of our winters. I have no fear of moisture under sealed covers with proper protection above them. Any excess of moisture inside of a hive that is sufficiently protected to prevent the formation of frost or ice, will gradually decrease by entrance ventilation. It will, to a certain degree, equalize itself with the dryer outside atmosphere, the same as temperature. If it is warmer outside, the inside temperature will rise; and if colder, the inside will get colder also. This change may be very gradual, but it will certainly take place, and this is one reason, if not the only reason, why these long-continued winters with low temperature prove generally so disastrous to our bees. There is no let-up to this equaliz-

ing process until our poor bees are frozen out, starved out, or drowned out. No matter what we call it, all three go hand in hand.

Mr. Coggs cites back nearly thirty years. He tells how his bees with sealed covers died while those with absorbents next to them lived. Not knowing the exact circumstances we can not give a reliable explanation, but we can form some idea. There might have been other factors, not noticed by Mr. C., that caused that difference. We must remember that bee-keeping was at that time in its infancy. We had not had quite as much experience then as we have now, and, consequently, could not give our bees the up-to-date care we do now.

Could it not be possible that, if Mr. C. at that time had given his bees from four to six inches of chaff or dry sawdust above their sealed covers, to prevent the formation of frost and ice, his bees might have lived the same as those he did protect in the way he stated?

I do not claim that blankets with absorbents next to the bees are not good for wintering them. On the contrary, under certain conditions it may be preferable. I have a number of single permanent chaff hives, and some of a different outside pattern. All of these I winter with absorbents next to the bees, and they generally winter all right. But take it one year with another, I think my sealed-cover colonies do fully as well; and, besides, it saves me a little time and labor in packing, handling blankets, mats, etc., when preparing my bees for winter.

The fact that moisture rises to the top, and is absorbed by the packing which Mr. C. claims as an advantage, I consider a bad feature. Wet packing will form into cakes of ice during severely cold weather, and bees are more liable to suffer from ice above them than they are under well-protected sealed covers.

La Salle, N. Y.

[Mr. Greiner echoes our experience exactly.—ED.]

### A GOOD PROSPECT FOR A FOUL-BROOD LAW IN IOWA.

#### Next National Convention at Sioux City, Iowa.

BY EDWARD G. BROWN.

On p. 115, Feb. 15, I notice an item by T. L. Shawler in regard to a foul-brood law for Iowa. There has been need of such a law in this State for some time; and last January, at the annual convention of the Western Honey-producers' Association, there were two bills drafted—one for South Dakota, which I understand has been passed, and one for Iowa, which is at present before the Iowa legislature.

N. E. France was with us at Sioux City, and had an active part in the drafting of these laws, so we feel that they ought to be in good form, and ought to cover the ground in good shape.

The Iowa bill is at present under the care of the Hon. Mr. Stoddard (a bee-keeper), State Representative from Mills Co.; and the thing most needed now is the active support of the bee-keepers of Iowa. We would gladly welcome any support that GLEANINGS might be able to give us.



We have received word from Mr. France that the National convention is to be held at Sioux City next fall (a fact due to the support of our association and the efforts of Mr. France); and I believe we can guarantee a strong local attendance.

Sergeant's Bluff, Iowa.

## MOVING BEES SHORT DISTANCES IN WARM WEATHER.

The Plan Works Well so Long as No  
Honey is Coming in.

BY THE NEW-MEXICO CHAP.

On page 91, Feb. 1, the editor describes "the only practical way to move bees 100 yards." If the colonies have to be moved during a honey-flow I think the advice is right; but if they have found no honey for two weeks I think they could be moved directly to the new stand. Our bees fly freely every day in the year except, perhaps, three or four days in a month during the coldest weather, and I have just moved some 25 colonies a distance of 25 or 30 yards without any trouble. A year ago last fall my partner and I moved 300 colonies a distance of three or four hundred yards without any appreciable loss. Later that same fall, but after cold weather had set in, I moved 200 colonies about 300 yards without loss. I know of one other party who moved her bees 100 yards a year or two ago, and there was no trouble. In moving the 25 colonies a few days ago I noted carefully, and saw that a few of them went back and flew around the old stand for an hour or two; but I think most of them had somewhat located the new stand, for they seemed to go back to it; others seemed to beg their way successfully into other hives near where their old hive had been, and a dozen or two I saw that had tried to enter other hives near the old stand and had been killed.

I would suggest that Mr. Cheatham move one or two stands to the new location late some evening, lean a board up in front of the entrance, and the next day carefully watch the result. If there is no honey-flow on I think it will work. If there is a honey-flow on, I know it will not work, for a neighbor of mine tried to compel me to move some 200 stands off his land last summer during the honey season, and after trying in vain to convince him it would not do, we tried it by moving about 25 stands one night over on to the next neighbor's land, some 20 yards away. The first neighbor happened around those parts about noon the next day, where I was having a rather "hot time," and he decided that it would be better for us both for the bees to stay where they were until the end of the season. The confusion resulted in one great whorl of bees over the old stands, and many clusters here and there on the bushes. These clusters of bees resembled natural swarms except that some of them were large enough for two or three swarms; and if any one else ever gets into a similar confusion I would advise him to be well veiled before attempting to hive one of these clusters. I never wear gloves, and often take a dozen stings in a minute without much complaint; but if I had had a pair of gloves that day I would have been

thankful. I never saw bees fight so. This happened at one of our outyards, and I had few extra hives there, and could not have used them if I had had plenty. I hurried to a neighboring farmhouse and got all the gunny sacks I could and went back. As fast as the bees settled I sacked the clusters and tied the sacks and laid them in the shade. A few minutes later I saw by a few escaping bees that the bees were getting too hot in some of the larger sacks. I then threw a little water on the sacks, and after the bees had quit settling I loaded the sacked bees in the spacious buggy which I always drive from yard to yard in, and after wetting the sacks again I made for our nearest yard, a mile and a half away, where there were many new nuclei; and when I got there I opened the mouth of the sacks and let the bees crawl into the nuclei, which they seemed very willing to do, and where they seemed to do no damage but a lot of good.

Mesilla Park, N. M., Feb. 13.

## BUCKWHEAT ONE OF THE MOST PROFITABLE OF FARM CROPS.

How to Grow it; how to Turn it into  
Money.

BY H. B. HARRINGTON.

[Our neighbor, Mr. H. B. Harrington, has had a large experience in the growing of buckwheat, both from the standpoint of honey production and as a profitable farm crop. He has secured some very fine stands of it near one of our outyards. The plants grew so thrifty, and the bees worked so well on it, that we asked him to prepare an article on how to grow it. It should be remembered that neighbor H. is an old experienced bee-keeper as well as farmer.—Ed.]

Having been requested to give in GLEANINGS our experience in raising and handling buckwheat we will give the actual tests, ranging over a period of more than forty years.

Buckwheat is the best, and, in fact, the only artificial honey-pasture that a bee-keeper can supply himself with at a profit, from the middle of July, when basswood and clover are past, up to the middle of September, when the fall bloom of wild flowers commences. There are no arbitrary rules that can be laid down as to its culture, because buckwheat, probably more than any other grain, will adapt itself to seasons and conditions. Very hot weather will sometimes blight it if you sow too early, and early frosts destroy it if you sow too late in the season; so you see you have a seed time from the 20th of June to August 1; and we once harvested over 40 bushels of very fine buckwheat per acre from a crop drilled on the 4th of August; but we used over 300 pounds of first-class blood-and-bone phosphate per acre.

It is a strong point in favor of buckwheat that it is a quick grower, and can succeed another crop. That crop was on the ground but 51 days from the time it was sown until the day it was thrashed; and the next day we drilled the same field to wheat without even the use of a dray and but very little extra fertilizer. The buckwheat left the land so mellow that it was the finest kind of summer fallow. We always raise our largest crops of wheat when we sow after buckwheat.

It is easy to see where the profit comes in from two crops where you have only to plow and fit



the land once. If the buck heat comes off too late for wheat, sow the field to rye.

In this section rye is the surest crop that can be raised. Never sow rye before the middle of October; and if you get the crop in by the first or even the 10th of November you run no great risk. Rye ground fine is the cheapest feed that we ever fattened hogs with. Small potatoes cooked and mixed in were used. It is still better to let the rye meal soak in water at least two days before feeding.

Now to bee-keepers who want the crop for honey. Plant the crop at three different times to prolong the honey-flow, and you will be sure to hit the lucky time for a good field of grain. Buckwheat, on an average, will occupy the land about sixty days. It will commence to yield honey in fifteen or twenty days from the time it is planted, and take about ten days to mature after the honey-flow ceases.

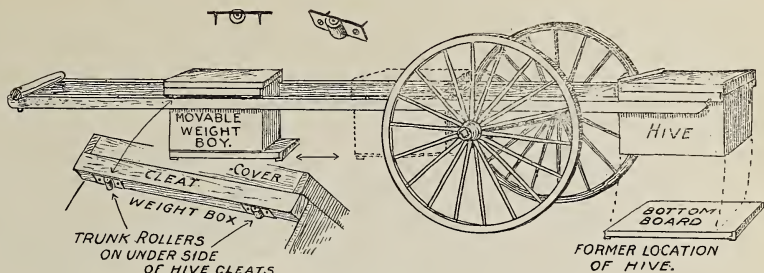
Sow the first crop on the 20th of June; the second crop on the 4th of July, and the third on the 18th of July. We pick the 18th because the best crop we ever raised was sown on that day.

Now, what is the grain worth? The best home-grown feed for dairy cows that we ever tried, and we have fed lots of this, is one-third buckwheat, one-third corn, and one-third oats. Rye is a good substitute for the corn in this mixture. Thirty-two bushels of buckwheat is equal in value to fifty bushels of oats, and it is just as good feed for a horse as it is for a cow.

Buckwheat is the greatest weed exterminator that a farmer can use. Plow in June and till well, and two crops will exterminate and clear any field of Canada thistles.

Now one word to potato-raisers. Plow under your best crop of clover about the first of July. Sow the land to buckwheat and to rye in the fall. The following June turn under the rye and you have the best conditions for potatoes that we ever tried.

Buckwheat will thrive on any kind of land, and pays well for the good phosphate that may be used. Don't be afraid to use a roller on the newly plowed land. Make a fine seed-bed. On



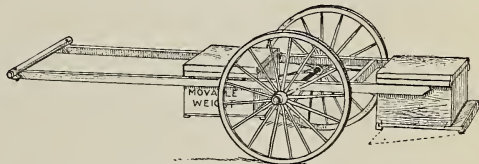
heavy clay soil sow three or four days before a rain if you can. If a heavy rain crusts the soil before the plant comes up, it is apt to weaken it. Medina, Ohio.

## IMPROVEMENTS ON THE BOARD-MAN WHEEL-CART.

### A Simple and Serviceable Hive-lifter.

BY H. R. BOARDMAN.

I have added a very simple arrangement to my wheel-cart that I use for moving hives, making it a practical hive-lifter. The illustrations show the idea. A weight is placed between the handles of the cart in such a way that it may be easily removed to and from the axle. The object of this weight is to counterbalance the weight of the hive. When lifting a hive I slide the ends



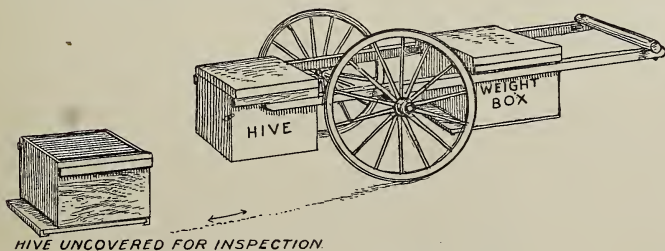
of the framework under the hive cleats in the usual way and then move the weight back far enough so that it will hold the hive suspended. In this way the upper stories can be removed and held to one side while the frames in the lower story are examined; or the lower story may be removed entirely, if necessary, or replaced by another one.

For a weight I use an ordinary hive-body in which I put whatever heavy material I desire. The illustration shows the trunk-rollers on the under side of the cleats, so that the weight may be slid back and forth without much exertion.

With this arrangement I can weigh hives as well as move them. With my regular scales I weighed different hives and marked the position of the weight on the framework when a good balance was secured. In this way I can get the weights of different hives accurately enough for general purposes.

Collins, Ohio.

[The ground on which



BOARDMAN'S HIVE-LIFTING WHEEL-CART.

Mr. Boardman recently improved this by adding a sliding weight to counterbalance the hive-lifter. By marking the framework, the weight of a colony can be quite accurately determined by noting the position of the weight-box when a good balance is secured.

Mr. Boardman's apiary is located is as level as a floor; but even on a rougher spot a cart of this kind could be used very nicely, providing the hive-rows were far enough apart.

To a certain extent it can be used as a hive or super lifter. We are not sure but that it is about as good as any thing we have shown.—Ed.]

## WHOLESALE WAX-RENDERING.

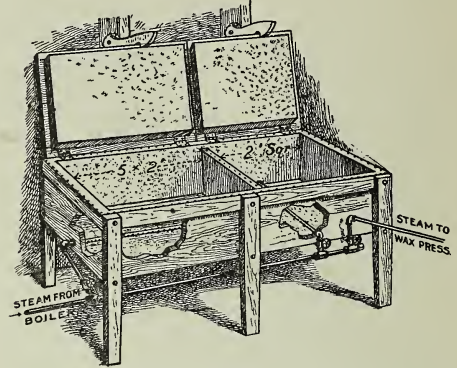
### Steam Used for Melting the Combs and for Heating the Press During Pressing.

BY EDWARD G. BROWN.

The wax-rendering apparatus which I use is somewhat beyond the reach of many bee-keepers; but it gets the wax, and I think a little nearer all of it, than most of the various outfits in use. I will give the figures of the wax rendered, and later describe the apparatus.

The best results which we have secured were from a lot of combs, many of which were 25 years old. There were 400 of these combs in the lot, and we obtained 164 lbs. of wax, or a little over 4 lbs. to every 10 combs. There were two working at the job, and the total time for rendering, including firing up the boiler, etc., was a little less than five hours. We have made a few full-day runs on combs varying in age from one to twenty-five years, and the results average about

250 to 375 lbs. of wax to the thousand combs. In a day we can usually render from 800 to 1000 combs, the number depending, of course, upon the condition of the combs, etc. When I buy



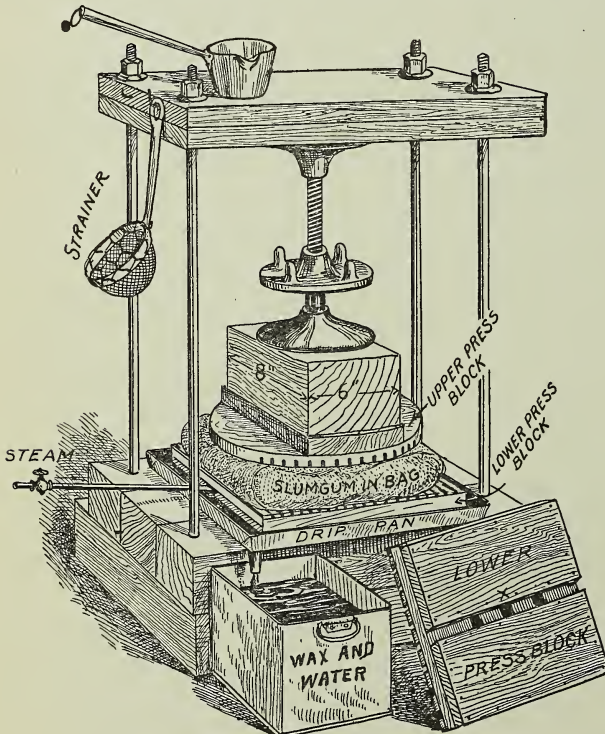
old combs I usually figure on about 2½ lbs. of wax to the hive of ten combs, Langstroth size.

In the last two years we have rendered some 8000 or 9000 combs on account of foul brood, and I believe that this is the only way to eradicate the disease completely from a yard when it once gets a start. There is just one other way; and that is, to build a bonfire and burn up all the supplies, etc., in connection with the yard.

Incidentally the latter plan is somewhat expensive, for it leaves the apiarist at the foot of the ladder, ready for a new start.

The figures given above may seem a little large to some; but the apparatus is of fair size, and requires two to work it at full speed, and a part of the time there were three of us. Our work-shop is an old cheese factory which I also use for storage room; and the heat for the wax-rendering is furnished by a big boiler from which I also get the power for running my buzzsaws, as I make all my own hives and heavier supplies.

The engraving shows the various parts of the tank, which is 2 ft. wide, 7 ft. long, 16 inches deep. It is divided into two parts, as shown, both parts being lined with galvanized iron, and fitted with a cover of the same material. Each part is about half filled with water; and steam for boiling the water is introduced by means of a ¾-inch pipe, on the under sides of which holes are drilled so that, when the steam is turned on, the contents of the tank are kept in motion. Each division of the tank has a separate pipe controlled by a valve so that heat can be applied when wanted, and as hard as desired. The press



BROWN'S WAX-RENDERING APPARATUS.



as shown in the second engraving is made from an old cheese-press. The construction is sufficiently clear, hence no detailed description is necessary. A pipe is arranged under the press in such a way that steam may be forced between the cleats of the bottom of the press, thus keeping the slumgum hot.

Two pieces of heavy burlap are used for holding the slumgum, the outer one being about 30 × 30 inches, and the inner one about 20 × 20. These are laid over a form 10 inches square and 4 inches deep, which will hold about two gallons of the melted combs. After the comb is dipped in the sides, the cloths are folded together, then the form is removed, the upper block placed in position, and the pressure applied. Unless these sacks are of extra good quality they do not last longer than eight or nine times, and even the best ones usually burst after fifteen or twenty pressings. A short-handled pitchfork, a wire strainer, and a number of 50 pound honey-cans with the top cut out, to be used as molds, complete the apparatus.

When rendering, the tanks are filled about half full of water brought to a boil by the steam. The larger compartment is then filled with combs still in the frames. About 50 frames of combs can be put in at once. The cover is then shut down and the steam turned on. From three to five minutes is required to do the work, and when the contents are boiling thoroughly the cover is raised and the steam partly turned off, so that the frames may be swished about in the water and finally picked out with the pitchfork. The steam is then shut off, and the slumgum skimmed by means of the strainer into the small division of the tank, when a new batch of frames containing combs may be put into the first or larger compartment.

While one man works at melting up the combs and tending the fire under the boiler, the other is kept busy working the press. The room is so hot and full of steam that the operators can wear but few clothes, and even then it is rather hot work.

The slumgum which is kept boiling is dipped from the small compartment of the tank into the burlap in the press, and the wax is run directly into square cans or molds. The frames as they come from the tank are washed cleaner than they could be scraped with a knife, and from experiments which I have made they are entirely free from any disease. We have not been able to make it pay to render the refuse from the press; but with what wax and propolis are left in the cheeses they make good fuel and furnish nearly enough fire to keep up steam. The cheeses are dumped directly into the boiler-room, and are burned as fast as pressed.

During the year 1907 we rendered about 1500 lbs. of wax, and in 1908 nearly 1100 lbs., so we think we have had quite an opportunity for testing the apparatus thoroughly.

Sergeant Bluff, Iowa.

[When wax is rendered on a large scale it pays to have every thing arranged conveniently so that there will be no time lost. Many a good plan fails because of too hasty an arrangement of details. Four pounds of wax for every ten combs is a good record, but we understand that this was

a little above the average. It would undoubtedly be a loss of time to run the refuse through the press a second time, but still it would be interesting to know the amount of wax left after the first pressing. We have believed that, for wholesale work, the hot-water press was the more economical one to use, since in the same length of time it gets a somewhat greater percentage of wax from the refuse.

A large amount of wax is wasted every year because the combs are pressed before they are boiled long enough. It was F. A. Salisbury who first called our attention to the fact that the combs must be not only melted but *thoroughly* heated. Heating the water that contains the comb, by means of steam introduced at the bottom, is very satisfactory, for the steam also keeps the contents of the tank constantly in motion.—Ed.]

## PRACTICAL INSTRUCTIONS FOR BEGINNERS.

### How to Handle Bees Without Being Stung; the Use of Smokers; Transferring.

BY E. D. TOWNSEND.

[The subjoined instructions on how to avoid stings, the use and misuse of smoke, are about the best we have seen for a long time. While they are particularly valuable to the beginner, they should be read by many veterans in the business. It is surprising, the careless (not to say the needless) way some bee-keepers have of stirring their bees up to fury. When in that condition one can not begin to do as much actual work, to say nothing of the discomfort and the loss of bees. Such carelessness is likely to cause damage-suits, restrictive ordinances (if in town), and no end of bad feeling among neighbors.—Ed.]

The beginner is likely to use too much smoke or else not enough, for the different dispositions of colonies are often confusing, and the amount of smoke needed to subdue one colony will often drive a more sensitive lot of bees out of the hive. More smoke is necessary during a honey-dearth than during a bountiful flow; but this additional amount of smoke must be given in smaller though more frequent doses. After removing the cover from the hive, and smoking the bees so that most of them run down between the combs, the first frame may stick in the hive so that it is finally lifted out with a snap or jerk, causing some of the bees to fly at the hands as if they would sting. In this case a more experienced bee-keeper would have noticed that the bees were ready to sting before any of them had taken wing, and he would have given them just a little smoke. The smoke should never be blown clear down into the hive, causing the whole colony to stampede, for it is then much more inconvenient to do the necessary work. There should be just enough smoke to drive down those bees that are on the tops of the frames; then at any time when a bee is seen about ready to take wing, as if to sting, a very little smoke is needed again. In time one learns to use the smoker just before there are any bees in the air.

The careless handling of bees causes many stings. There is rarely a season but that we have some inexperienced help in our yards; and the first advice that we give a beginner is that, if there should be an accident, such as the dropping of a frame of bees, or if in any way the bees get the best of the situation, he should retreat until

they are quieted down. Then with a smoker well going he is to go to the hive and subdue them. In such cases, where there has been an accident, and bees killed or combs broken, the work becomes more complicated, for many of the bees are likely to take wing when smoked, and be in a stinging mood while in the air. Under these circumstances we alternate between smoking the bees in the air and those in the hive until most of the flying ones have settled down; then the work proceeds where it left off. It is a little humiliating to run from a colony of bees that one is handling; but beginners often have trouble, so that I am obliged to tell them to go into the honey-house until the colony becomes quiet.

One of the most serious accidents that ever occurred in our yards was when honey was being removed. Our new helper, not having had much experience, did not make sure that the frames in the lower story were cut loose from those in the super, so when he attempted to lift off this super two of the lower frames were lifted up with it. Not knowing what was the trouble, the super was lowered on the hive and a second attempt made to lift it off without giving any more smoke. By this time many bees had been killed, and there is nothing that will so enrage bees as this. We noticed the predicament and ordered a retreat, otherwise there would have been a case of hard stinging. An experienced bee-keeper, after lowering the super back on the hive, would have smoked the bees well and then have made sure that the two sets of frames were entirely separate before a second attempt was made.

A bee-keeper who does not know how to use smoke, or who does not take the precaution to work carefully, will always have cross bees. I have been in yards where the bees were so cross that it was almost impossible to stay there a minute without having protection for the head and hands. In other yards of bees of the same strain, and under the same circumstances, one could work all day with no protection whatever, and still receive no stings. The difference is all in the intelligent use of smoke and in the careful handling of the bees.

#### HOW TO TRANSFER.

In a former article I told of buying four colonies of bees in Metcalfe hives. Ordinary Jumbo frames would be similar to those in these Metcalfe hives if they stood on end. In other words, the top-bars were shorter than the end-bars. The combs were fairly straight in the frames so that they were much easier to transfer than if they had been built in box hives, or criss-cross, as they sometimes are in frame hives if no starters are provided at the top of the frames for guides. When ready to transfer a table should be secured, preferably in a honey-house away from robber bees. A bottom-board should be in readiness also to lay the combs on that are to be transferred to new frames. Blow a little smoke into the entrance of the hive to be transferred, and remove the cover, giving a little smoke also over the tops of the frames. As the work progresses, there is apt to be more or less jarring of the hive, and more smoke will be needed, so the smoker should be kept in good condition and in a convenient place where it can be had at a moment's notice.

As it is a frame hive that is being transferred, pry the frames apart so that the first comb may be easily removed, and then shake most of the bees from it in front of the hive, brushing off, with a Coggs hall bee-brush, the few that remain. In the case of box hives it is usually necessary to pry off one side of the hive and then cut out the combs to be transferred. Since the combs are not usually attached to the bottom of a box hive it is well to turn it upside down and remove the bottom-board. Then with a long knife cut the combs loose from one side of the hive and remove that side. When the combs are built in cornerwise I remove two sides of the box so that they can be taken out easily.

When the combs are free from bees, place them, one at a time, on the board in the honey-house and lay the new frame on top of it in order to get the exact size. A thin case-knife is the best tool for trimming the combs. They should be cut just a little larger than the inside of the frames so that they can be crowded in. The frame containing the comb may then be turned on edge by tilting up the board (frame and all) to keep the comb from falling out until the frame is vertical. Then wrap comb and frame with fine wire; and when the bees have the comb well fastened in the frame, some time afterward, this wire may be cut along the top-bar and pulled out without removing any of the frames.

As soon as one new frame is filled with old comb it is placed in the new hive, which should now stand where the old one did, the old hive being moved a rod or so to one side. From this time on, all of the bees should be brushed into the new hive; and when all the combs are transferred, the bees that are left in the old hive can be dumped before the entrance of the new one. One will usually get from four to six worker combs from an old hive, and the rest of the space in the new hive should be filled with frames containing full sheets of foundation. It would not do to use frames with starters only, for the bees would build drone comb, as will be explained in a further article.

The above plan was the orthodox method of transferring at the time I began bee-keeping. Since then we have used other and better methods. Later on I will describe our up-to-date plan for transferring as it is done during the honey season.

Remus, Mich.

[If every reader of GLEANINGS could make a visit to one of Mr. Townsend's yards he would more clearly see the wisdom of the advice given above. Though nearly all the bees are hybrids, they seem more like gentle Italians—simply because of the care used in handling them. Mr. Townsend moves slowly, but he accomplishes a great deal. When a man is bending over a hive, "haste makes waste."—ED.]

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#### SECOND-HAND CANS VS. NEW; USE NEW CANS ONLY.

Our experience is, never use second-hand cans, excepting in cases when they are sent to a local market, and a person knows the cans. Cans left over from one season to another, having had honey in, 19 times out of 20 will rust. Use nothing but *new* cans is what we advise.

El Toro, Cal.

ALISO APIARY.



# HEADS OF GRAIN

## FROM DIFFERENT FIELDS

HONEY LARGELY FROM ASTER SHOULD NOT BE USED FOR WINTER STORES.

Some years ago I lived in a place where the principal honey-flow was from goldenrod and aster. We usually had a little honey from fruit-bloom, and a little later from an unknown source; and about once in ten years we had a flow from white clover. No one knew why the white clover did not yield every year, for the ground was often white with it.

By extracting at the beginning of the aster flow, and again at its close, about Sept. 10, I was able to get the pure aster honey. It is very white, and has a mild flavor. It granulates solid with a fine grain. Goldenrod honey granulates with a very coarse grain; and, if pure, there is much of it that does not solidify, but remains liquid. Aster honey in any considerable quantity is not fit to winter bees on, but I find that goldenrod is fairly good. The only way for me to do was to set aside enough sealed goldenrod honey for winter stores and extract the rest, sometimes feeding sugar if there was not enough for a winter supply.

I averaged 35 or 40 pounds of this goldenrod and aster honey per colony. This was not a very large yield; but considering the short days and the cool nights it shows that these flowers contained a good deal of nectar. I believe that many others could get fall honey if they worked for it.

Aster comb honey should be sold as soon as possible, so that it may be used before it granulates. It should not be sent to distant cities, for it would then be held in stock by dealers.

Plainfield, N. J.

B. C. WHITNEY.

RINSING 60-LB. CANS; ALLEN LATHAM'S ADVICE INDORSAD.

In GLEANINGS for March 1, p. 129, I read an article by Mr. Allen Latham, which I enjoyed because he has very ably and properly brought me to task on the question of cleanliness, and I now wish to say what I would have said in my former article had I been sure that all honey-producers would be as careful as Mr. Latham in the preparation of the vessels that were to contain their honey—wash them out; but I was of the opinion then, and am now, that many of the apiarists would not follow the method indicated by him. I now think this will be sufficient to pacify our friend; but yet I do not depart from what I formerly said, that "where the water can not be thoroughly dried out of the can it should not be introduced." But I wish that all who have honey that they wish to put in tin cans would follow Mr. Latham's directions.

Chicago, Ill., March 6. R. A. BURNETT.

A NOVEL METHOD OF USING ELECTRIC LIGHTS TO COAX BEES.

About New Year's day a friend told us of a bee-tree which he discovered in the fall. It was an old hemlock on the side of a mountain. About

Jan. 10 he called at our place and said that, in passing along the road at the foot of the mountain, he missed the old tree. We climbed about a quarter of a mile over shingle rock and boulders to the foot of the cliff wall, and there was the old hemlock. It had broken off from the weight of snow and the wind, and fallen about fifty feet and lodged against some stunted trees. We sawed it off above and below the bees, put the section in a big bag, and took it home. We certainly could not do any thing outdoors, as the temperature was close to zero; so after working our heads a while we tried the following plan:

Our friend who owned the bees has a big stove in his garage, and the room is lighted by electricity. We left the bees in the bag, still in their native stump, till dark. We built a rousing fire, and when the room was warm we placed a hive on the floor, rigged two electric lights on long wires so as to be portable; put one inside of the empty super on the hive, and placed the other light close to the mouth of the hive outside. Then with an ax we split up the stump and shook the bees all out on the floor. The building was hot and dark except for the one light at the hive entrance, and in ten minutes we had a peck of bees gathered around that light. We then turned that one out, and the bees could see a faint light where the one inside of the super shone down between the frames, and in ten minutes more every bee was inside on the combs, in which there was plenty for them to eat. They are now in a dark cellar doing nicely, with some brood in the hive.

BRISTOL & PARKIN.

Meriden, Ct.

PLenty OF CLOVER WHERE THERE WAS SUPPOSED TO BE NONE.

Our prospect for white clover seems good here. In places the ground seems to be carpeted with the vines that recent rains have brought to life. I was at neighbor Mitchell's two days ago, and asked him if he had any in his yard. He thought not. Between two bricks was a mass grown up and tramped down, and it looked like dead grass. On closer inspection we found it to be white-clover vines, and they were putting out tiny leaves all over. He had stepped on them on the bricks hundreds of times without hurting them.

P. E. CROMER.

Springfield, Ohio.

PLACING THE WEAK COLONY UNDER THE STRONG ONE INSTEAD OF OVER IT.

A bee-keeper in England, p. 63, Jan. 15, says that he has found the method of strengthening weak colonies by placing them over strong ones answers very well. But has he tried my plan of placing the strong colonies over the weak ones? If not, it may be good policy to do so. He may be surprised to find this by far the better plan. I have practiced both plans for several years, so I know from experience. There are several good reasons for placing the weak colony under the strong one, and I know of no objections. If any one can point out any objections to my plan I should be glad to hear from such. I regard my method as being as far ahead of the other as my plan of treating foul brood is ahead of the shaking plan. I say this notwithstanding Dr. Phil-

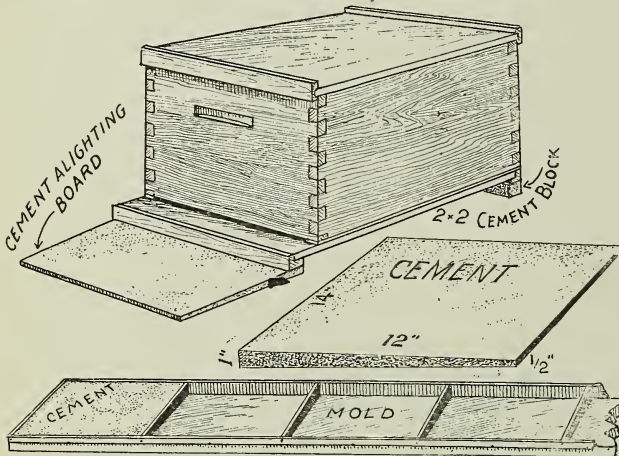
lips is of the belief that "the shaking treatment is the only treatment worthy of consideration" in curing foul brood. See what he and friend Taylor say on that topic on pages 72 and 74 of the last report of the National Bee-keepers' Association.

M. M. BALDRIDGE.

St. Charles, Ill., Jan. 25.

#### A CONCRETE ALIGHTING-BOARD AND HIVE-FOUNDATION.

For some time I have been using an alighting-board made of concrete, the shape and size of which are shown in the engraving. In order to make these boards I use a 16-foot plank, 12 inches wide, and arrange on this the framework for a form. This framework is 1 inch wide at the back,  $\frac{1}{2}$  inch wide in front, and the cross-pieces taper down from 1 inch at the back to  $\frac{1}{2}$  inch in front. These cross-pieces should be 12 inches apart for an eight-frame hive, or 14 inches apart for a ten-frame hive. The whole framework should be made solid, so that it can be raised up from the plank after the concrete has set for a few hours.



After the framework is removed, and when the concrete is of the right consistency, I smooth off the surface of the edges with a trowel. I let the blocks remain on the plank until the next morning, and then sprinkle them and leave them in the shade for a day or two.

I use one part of cement and five or six parts of sand. The blocks 2 inches square used under the back of the hive are also made of the same mixture. I find that this arrangement is very cheap, and yet it keeps the weeds away from the front of the hive and prevents all rotting of the bottom-board due to the contact with the damp soil.

MILO SMITH.

Des Moines, Iowa.

#### A CHANGE IN THE DIMENSIONS OF THE PETTIT HONEY-STRAINER.

On further reflection I see no use in having an outlet on my strainer longer than  $1\frac{1}{2}$  inches. For any length over this is only in the way. The diameter, however of the outlet should be  $2\frac{1}{2}$

inches instead of 2 inches, as given in GLEANINGS. The wire-cloth basket should not be as high as the tin cans, for the upper edge of the basket would be in the way when pouring in a pail of honey. The proper dimensions are as follows: Height of wire-cloth basket,  $7\frac{1}{2}$  inches; space under the basket,  $\frac{7}{8}$  inch. The dimensions for the tin can are all right as given in the March 1st issue; that is, height of can 9 inches, and diameter 16 inches.

S. T. PETTIT.

Aylmer, Ont., Can.

#### MORE ABOUT HOUSE-APIARIES.

Those who have time, money, and interest to study bees should certainly have a small house-apiry, in addition to the regular apiry, consisting of hives on separate stands after the fashion now so common in America. As a whole, house-apiries are not suitable for extensive producers.

About sixteen years ago I erected a building for holding 36 hives, placing three rows one above the other. The room was warmed with a stove which I could regulate almost to perfection; and, although it might be freezing outdoors, the inside temperature was like that in a church. In the middle of the winter the plan was satisfactory; but conditions were not so good in early spring. By means of the artificial heat I was able to get a large number of young bees very early; but more of them were lost from the hives in the house-apiry than from those out of doors where there was no artificial heat. I have had three houses made in different ways, but my colonies on separate stands out of doors always make more honey than those in the building. I believe that there should never be three rows of hives one above the other, as two are enough. Furthermore, the hives should never be placed on two or three sides of the building. They should be on only one side—with us, the south. If the building is large enough, one row of hives is best.

R. STRIMPL.

Networitz, Bohemia.

#### TAKING BEES FROM THE CELLAR IN COLD RATHER THAN IN WARM WEATHER.

It has been and is now the practice to take bees from the cellar in nice warm weather, or to set them out at night when the next day would promise a good fly. With me this is all changed. I much prefer to choose a time when the thermometer is below the freezing-point rather than above, for they are so much more easily handled then than in warm weather. The bottom-boards I use for the cellar have a wire screen one inch wide and the length of the hive, and the bees are confined both in setting in and taking out of the cellar. I have practiced the above plan for two years; and if I may be forgiven for taking them



out in warm weather during the past 35 years I don't believe I will ever be caught doing it again. Try it and see how nicely they will quiet down, and wait until the weather is propitious for a good fly.

F. H. C. RENIUS.

Oswego, N. Y., March 3.

[We think it is the general practice to take bees out of the cellar when the temperature is at or near the freezing-point, rather than when it is warm enough for the bees to fly. We find a cool atmosphere much better.—Ed.]

MUCH OF THE HONEY AND WAX COMING IN TO NEW YORK IS IN ROUTE FOR EUROPE.

Mr. Root:—In your March 1st issue, page 125, there is an extract, presumably from Thomas' *Weekly Review*, showing the arrivals of foreign honey at New York from Dec. 17, 1908, to Jan. 21, 1909. The article gives the arrivals as follows:

2520 barrels, 236 casks, 290 tierces, or 3046 pkgs. in all.

The writer of the article assumes that the entire quantity was entered for consumption in the United States, which, however, is not so; and as I have for years kept an accurate record of all arrivals of honey and beeswax at New York I am in position to give you reliable information as to the exact arrivals and their ultimate destination.

From Dec. 17 to Jan. 21, the exact arrivals at New York were 2492 barrels and 212 tierces, or 2704 pkgs. in all. Of this, 2090 barrels and 212 tierces were in transit for Europe, so that only 402 barrels remained for consumption in the United States; and of this quantity, the greater part was taken by one concern. These figures are absolutely correct.

At least three-fourths, if not more, of the honey entered at New York is in transit for Europe, and it would no doubt surprise your correspondent to know how little of the foreign honey actually remains in this country.

As to beeswax, more than half the arrivals at New York are in transit for Europe.

New York, March 11. D. STEENGRABE.

AN INTERESTING TIME DURING TRANSFERRING.

I undertook to transfer a colony from a sugar-bucket to a hive last July. It was very interesting until I procured a veil and smoker; and even then it was *rather* interesting, and it remained interesting for several days; but I got them transferred. As the hive was rather close to our well we had to borrow water for a week. I got used to being stung, and didn't mind it at all after a time; but when a noisy bee gets in one's hair it's quite annoying, especially to a rather high-strung sort of fellow.

MATT. W. BALDWIN.

Sioux City, Iowa.

WILL NEVER USE COLD KNIVES AGAIN.

For years my neighbor and I used cold knives for uncapping honey. The past season we tried the hot knives, and we wish to say that we like them so well that we never want to use the cold knives again. It is surprising to see how easily a hot knife will glide over the combs, especially when the honey is thick and well ripened.

La Crescent, Minn.

G. A. BARBISH.

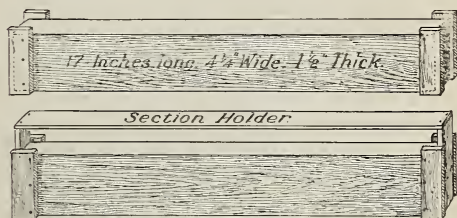
A FORM FOR NAILING SECTION-HOLDERS.

For three years I have used a form for nailing up my section-holders, and I would not be without one now. The engraving shows the construction that I prefer. I use the 1½-inch plain section; and, being handy with tools, and familiar with wood-working machinery, I make my own supers and section-holders.

The block that I use for the forms is the same length, width, and thickness as four 4¼-inch sections; that is, it is 17 inches long, 4¼ wide, and 1½ thick. The two cleats at each end of this block are arranged in such a way, as shown by the engraving, that the different pieces of the section-holder are always held just right, so that, when they are nailed together, the finished holder must always be exactly the same size.

Rathbone, N. Y.

LEROY LLOYD.



[This form is essentially what we are using at Medina. Something of this kind is almost a necessity to insure accuracy as well as speed in nailing.—Ed.]

WOULD A CONCRETE HONEY-HOUSE BE TOO DAMP?

I am planning to build a honey-house; and if it is practicable I should like to make it of concrete. A concrete building would be more nearly fire-proof than a wooden building. It would be durable, and I don't think the cost would be excessive.

On the other hand, I am afraid it will be too damp if it is made with solid walls. Lumber is becoming scarce, and concrete is coming into general use for many kinds of buildings.

McNabb, Ill.

EDWIN O. GUNN.

[Some of our factory buildings are made of solid concrete, floors and all. The only fault we find is that they are too *dry*. If the building you propose building can be ventilated, or (better still) have artificial heat occasionally, you will have no trouble about dampness.—Ed.]

A COLONY THAT DESERTED THE HIVE IN WINTER.

On the 24th of January one of my colonies deserted the hive for good. The hive was in good condition, and I should like to know why the bees went away. There were both honey and brood in the combs.

RAY PORTS.

Dor, Ark.

[Impending starvation is the most common cause of driving a colony out of its hive in winter. As you say the "hive was in good condition," we assume there were sufficient stores. In that case field-mice might have taken up their abode there; and as the house wasn't big enough for two families, one of them deserted.—Ed.]

## CHANGING FROM LANGSTROTH TO JUMBO HIVES.

Please ask the editor to let "Mexicano" know the best way to change the brood-nest from ten-frame Langstroth to the ten-frame Jumbo, in the next issue of GLEANINGS. I have made a beginning by hiving all swarms in Jumbos, but I have 40 L. brood-nests that I want to make into Jumbos. That is the only hive for the tropics.

JAS. MAUNDER.

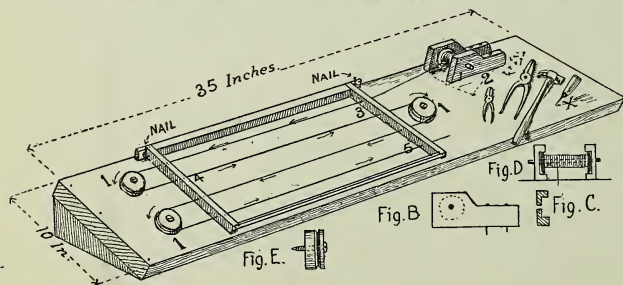
Sanborn, Vera Cruz, Mexico, March 24.

[As to changing a ten-frame Langstroth over to a Jumbo hive, you'd better not do it. Those Langstroth bodies will prove to be very useful if you propose adopting the Jumbo system. You had best get new hives Jumbo depth as well as frames, then use the old Langstroth bodies and frames for surplus extracted honey, or for tiering up generally. It would cost too much, and be impracticable to make the change by adding a rim to the bottom of the body, and then you would have to throw away the Langstroth frames. While Langstroth combs could be put into Jumbo frames, and the bees would fill out the space, the operation would cost considerable time, and be too much of a sacrifice of good material.

We worked one yard with Jumbo hives and ten-frame Langstroth bodies. The two go together very nicely, because they both take the same cover and bottom-board. The Langstroth frame is far handier to uncap and extract than a Jumbo. For your part of the country you will find what you have of Langstroth dimensions good property.—Ed.]

## A CONVENIENT FORM FOR WIRING FRAMES.

I am sending a diagram of a device I use in threading wire into Hoffman frames. It entirely overcomes the coiling and kinking of the wire. The board is 35 inches in length, and 10 in width. On this I place a Hoffman frame, as shown, a casing-nail being driven through the end staples to keep the frame in position while threading.



Next the three pulleys are located in the proper position. No. 2 is where the spool of wire is fastened. The blocks are constructed in such a way that the wire can not uncoil over the end of the spool and kink. The pulleys are just large enough to draw the wire from one hole and feed it right into the other.

Having every thing in place we are ready for threading. Draw the wire in at 3, then around the first pulley and into 4, and so on, ending at 5, then catching the wire at 3, lifting it from the pulley last used; draw up the slack, and so on till the slack is all out.

One of the blocks holding the spool of wire is fastened solid with two nails; the other, with one nail, thus making it movable for inserting the spool.

J. F. ULMER.

Galion, O., Feb. 4.

## A CAUTION ABOUT CELLAR VENTILATION.

Thousands of bees have been lost because of a lack of ventilation in bee-cellars. When the temperature stays at 45 degrees there is no need of extra ventilation; but it becomes very necessary when it goes above 50 degrees. There should never be a draft through the cellar, however. I put coarse burlap over all the openings, which lets in the fresh air but prevents a strong draft. We have 272 colonies in our cellar, and we have had no trouble this winter in spite of the variable temperature. When the outside temperature goes below zero the cold air rushes down into the cellar so rapidly that it is necessary to close the ventilators for a time until conditions change again.

GEO. B. HOWE.

Black River, N. Y.

[We sometimes use an electric fan in forcing air direct from outdoors down between the hives in our cellar. If the bees become uneasy this enforced draft of fresh air seems to quiet them. Of course, if the air outdoors is down to zero it might be too much of a good thing. Perhaps this is what our correspondent refers to as being bad. Otherwise our experience would not coincide with his.—Ed.]

## SHOULD THE BUYER OF HONEY PAY THE PRODUCER FOR THE CANS? RINSING NOT ADVISED.

On page 1245, October 15, you print a letter from D. Everett Lyon, and use a full page in answering it; but in my opinion you do not touch the point brought out by Mr. Lyon; i.e., we pay from 85 to 95 cts. per case for bright new cans (and they are the only kind it pays to handle for honey), and in selling we are forced not only to

get nothing for our cans, but must accept a tare of 18 lbs., the actual weight of case and cans. Then the wholesaler advertises our cases and cans for sale, which he has never allowed us a copper for, and has received a tare of 18 lbs. so he may not pay for the case and the cans.

On page 1268 you ask as to the practice of rinsing *new* cans. They are generally used as they are, for all soldering is done on the outside, and it is

very difficult to dry them after rinsing. We have used cans for 28 years, and do not follow rinsing.

H. S. PHILBROOK.

Oxnard, Cal., Oct. 25.

[The above communication was sent to Mr. R. A. Burnett for answer. His reply follows.—Ed.]

Mr. Lyon says, "We pay from 85 to 95 cts. per case for new cans, and in selling we are forced not only to get nothing for our cans, but must accept a tare of 18 lbs., the actual weight of case and cans. Then the wholesaler advertises our



cases and cans for sale, which he never allowed us a copper for, and has received a tare of 18 lbs., so he may not pay for the case and cans."

Yes, the weight of cases in cans is deducted when the honey is sold. One reason for this is that the cases vary in weight (as do the cans to some degree). We have cases that look quite similar, but they vary from 9 to 13 lbs. in weight, resulting from being of a different kind of wood, and different thickness, and because of center boards and non-center boards. The final purchaser who empties the cases and cans finds that there is a possibility of their getting something for them; and while he as a rule does not want them refilled with honey, he does not want to lose the opportunity of getting what he can out of them to help cheapen the cost of the honey. Now, were it not for the cupidity of the honey-producer he would not be able to sell them, as there is but little other use that the can suitable for honey can be put to.

Some people who would not like to have their names mentioned make a practice of buying these old cans and cases, and using them for honey, and selling them at a profit to their fellow honey-producers.

R. A. BURNETT.

Chicago, Ill.

#### IMPERIAL VALLEY BEE-KEEPERS' ASSOCIATION AND ITS NEW WAREHOUSE FOR THE STORAGE OF HONEY AND SUPPLIES.

The Imperial Valley bee-keepers held their monthly meeting March 27. Directors' meeting was held at 10 A. M. J. B. Whittaker, of El Centro, was chosen for secretary and general manager for this year. Stockholders' meeting was held at 2 P. M., same day. Every one expressed himself as being well pleased with the new warehouse, which was just finished, all but painting and the placing of scales. The warehouse is owned by the association, and is all paid for, and will be used exclusively for storing honey and bee-supplies. There was not a warehouse in the valley where we could store honey last year. Had it been an off year for prices we would have been badly handicapped. However, this year we shall be in position so that we shall not be obliged to sell at any old price.

Foul-brood Inspector A. B. Bland reported four colonies affected with foul brood which he treated *a la* McEvoy out of 1500 inspected. We are determined not to allow it a foothold here. All bees coming in will be inspected on arrival.

J. W. GEORGE.

Imperial, Cal., March 29.

#### TROUBLE WITH BEES STINGING STOCK.

I have kept bees for years. I have 70 colonies in a yard that joins near a corner of a man's field, but is not near any house or any one else's land. Now, this man who owns the lot that corners on my bee-yard says that I must not put my bees there this year. Now, can he stop me? Two or three of the bees stung his men when they were at work last summer. You must know whether I have a right to put them there or not.

Troy, N. Y.

GEORGE H. POLLOCK.

[We would advise you, under the circumstances, to put your bees in some other location—especially if you can do this conveniently. It sometimes happens that, when a bee-yard is lo-

cated close to a pasture, stock will get near the line fence or next to the bees, and right in their flight. If this occurs when the bees are a little cross, or when there is a heavy flight to the fields for honey, the stock are likely to get stung. In one case in particular of this character a bee-keeper was sued for heavy damages, and the jury awarded a verdict against him in the sum of seven or eight hundred dollars. While you have a right to put your bees on your own property, yet when that property of yours interferes with the property of another, the aggrieved party may begin an action for damages.

We take it that you could, just as well as not, move your bees further away from the line fence. If you could put them some three or four hundred feet away, or, better still, if you could place them behind a hedge fence or clump of bushes so that the bees would have to rise in their flight some twelve or fifteen feet above ground when leaving the immediate vicinity of the hive, and thus be out of the direct range of any stock close to the ground, you would avoid trouble to a great extent.

As a general thing, bees can be located near a line fence year in and year out without any difficulty. Any neighbor kindly disposed will be willing to put up with a little inconvenience at certain seasons of the year, especially if he is "sweetened up" with some nice honey every now and then. We have one large yard located near a line fence and right next to a meadow. A team of horses pulling a mowing-machine was stung a number of times; but our neighbor was a reasonable and a kindly man, and we told him that, whenever he had to do any mowing again in that field, if he would let us know we would send our own man and team down and assume our own risk in the mowing.—ED.]

#### TO GET RID OF POLLEN-CLOGGED COMBS.

On page 38, Jan. 1, T. E. Diener, asks what to do with combs packed with pollen. As my bees for a while after the white-clover harvest stop breeding almost entirely they soon have these brood-combs packed with pollen. I take out one or two combs, generally the two outside ones, and then take two out of the center, and put them on the outside and put in the center two frames with full sheets of foundation. The bees soon draw out this foundation into nice white comb, and the queen takes possession of these at once. While rearing the brood in these combs the bees use up considerable of the pollen in the adjoining combs, which gives more room for the queen to lay. By the time the honey harvest in the fall begins, the hive is again filled with young bees ready for work, and combs full of brood. The pollen-packed combs I give to nuclei with young queens that are not occupying a full set of combs. They use up the pollen in these combs.

Augusta, Mo.

H. STOCK.

#### STORM-DOORS DO MORE HARM THAN GOOD.

In regard to storm-doors over the entrances, page 96, Feb. 15, I have tried these doors for six years at intervals, and find they do more harm than good, as a rule.

GLENWOOD BEARD.

Magnetic Springs, Ohio, March 4.

[This has been our experience.—ED.]

# OUR HOMES

By A. I. Root

Honor thy father and thy mother, that thy days may be long upon the land which the Lord thy God giveth thee.—Ex. 20:12.

It is particularly the *mother* of the home, rather than the father, that I wish to talk about today. I am strongly of the opinion that the *mothers* of the world are more tasked and overworked than any other inmate of the home. The mother who bears the children has more love for them than the father or any one else, and God calls on her to toil and make sacrifice as he calls on no one else. I have seen careless giddy girls who let their mothers work early and late (almost oblivious of how much trouble and worry they made her), and yet when *they* got married and had children to train they turned about and did much as their mother did. Some of these same "giddy girls" may read this Home paper—at least I hope they will—and, may be, "turn over a new leaf" *before* they become mothers also, and before that patient and toiling mother lies cold in death.

The home is the mother's domain. All her hopes and joys and all her pride are centered there. It is the mother who wants her home to look tidy. She is the one most interested in having the house painted, the front fence fixed up, the dooryard and lawn slicked up, the flower-beds made to bloom and blossom, and all things visible to passersby made to look respectable and in keeping with the rest of the street and neighborhood. "What *is* home without a mother?"

Now, then, my friend, while it is "spring-time" what are you doing to "honor" that mother, as in the language of our text? As it may help by way of suggestion, if nothing else, I wish to tell you what I have been doing around our Florida home for the past few days. Mrs. Root said, first, she must have a green lawn in front of the house, no matter where it was, in Ohio or in Florida, and we have the Bermuda grass started very nicely all over the front yard. There is never any mud here—at least nothing like our Ohio mud. Our little auto never gets "spattered," and dust doesn't *cling* to it as the Ohio dust does; but you can almost keep it looking "spick-span new" by wiping the varnished work with your handkerchief. Now, after telling you this it seems a little funny to say that a sort of black sand is blown by the wind into the houses, over porches, and almost everywhere. This black sand, when the wind blows hard, will cover the surface of your milk and other food, almost in spite of you. Of course, it brushes off easily when it is dry; but if you spill some water on it you will have about the worst-looking floors and porches imaginable. Nothing but scrubbing will take it off. Our very heavy dews settle all over the porches, and this dew does no harm unless you walk over it when wet; but if you forget and do so the black sand and dew make the floor look as if you had walked in ink and then across the porch. In the early morning, or just after a rain, your shoes will need a very thorough scraping and rubbing on the mat before you go inside or you will make untold work and worry for that sensitive and patient "little mother."

I can imagine right here that a hundred (may be a *thousand*) "mothers" all over our land break out with:

"O Mr. Root! It is not only *Florida* but almost *everywhere* that you men-folks could save us untold trouble if you only *would* practice what you are now preaching."

Well, I for one *am* practicing what I preach. By the way, some time ago our Medina church was given a very thorough overhauling. It was painted all over, the floor varnished, new carpets or rugs, etc. After it was all done I went to the pastor and to the Sunday-school superintendent and told them I wanted to talk to our people, especially the Sunday-school scholars, about being sure they all had very *clean feet* before coming into the new clean church and Sunday-school rooms. To add emphasis to my proposed talk I went and bought some doormats and foot-scrapers to hold up before the audience. What do you think? Our good pastor and the Sunday-school superintendent (my own son-in-law) both said there was so much *important business* on hand there wasn't any time for my talk. The mothers of the church didn't know any thing about it, or I think there would have been an "opening" somewhere.

Look here, my friend; when I come around your way if you want me to talk to *your* people about doormats and footscrapers I will always be ready. Perhaps some of you may have guessed already where I got my enthusiasm. Yes, it is true I was *once* a savage and a heathen; but God in his loving kindness sent Mrs. Root—no, that is wrong—he sent *me* to live with Mrs. Root. For that one act I shall praise his holy name with my latest breath. Listen!

The other evening I got home late with a "flat tire." As I wanted the machine early next morning I told "Sue" I must fix it; but as my colored helper lived a long way off I feared I should have trouble. I told her she was not strong enough to pull up the heavy tire so I could remove the inner tube; but she had faith, and we two made an excellent repair. Her advice and suggestions counted for more than her strength.\*

Now, don't scold, any of you, if I confess right here in print that the touch of her fingers thrilled me while we two pulled on that rubber outer casing just as much as they did *fifty years ago* when I used to go over across the river to her father's home when we first became acquainted. Where God rules, and the dear Savior's love fills the heart, the joys of courtship go clear on to seventy years, and I don't know *yet* how much longer.

Well, as soon as that pretty and handy auto house was built Mrs. Root said we wanted a cement walk to it from the house. There had to be several curves; but with some planed stuff 1×3 inches I bent them so as to make a very pretty two foot walk. As it cost \$4.00 for eight hour's work for a mason, after seeing him work I built some more walks myself with my colored help. I just finished the last one yesterday, and I succeeded so well it makes me feel happy every time

\*That "Best light" lamp I have mentioned elsewhere helped us greatly in working after dark. It can be carried safely in quite a strong wind when wanted out of doors. By the way, Mrs. Root says she believes now she would rather have our little light-running auto, for *our use*, than any one of the great big expensive affairs, and I rather agree with her.



I look at it. These walks were all made in order that the work of "keeping house" might be lightened, and I have my reward in seeing Mrs. Root well and happy, with no more care and work than she cares for.\*

Perhaps I should explain that, after the pine strips, 1x3, were staked on edge just two feet apart we pounded broken stone between them within about an inch of the top. On this we put concrete made of about one part cement to six coarse sand to fill the spaces between the broken stone, and, lastly, about an inch or less of one of cement to two parts sand for the top. The top is finished a little crowning so rain water will not stand on it. Two sacks of cement (60 cts. per sack) and a barrel of sand made a walk 30 feet long. In the North, where there is freezing and thawing, a deeper and more expensive foundation is needed. Good roads, good walks, not only on the streets but around the houses, hard-wood and hard-finished floors, with movable rugs, are (thank God) now doing much toward giving the mothers neat and tidy homes and lessening the labor of keeping them so.

Now, my friend, can you not think of some mother whose cares you can lighten and whose face you can brighten by helping to make her burdens easier? and, please don't forget that, *in so doing*, God's holy word declares "thy days may be long in the land."

#### GAMBLING IN "HOMES."

We are all aware, or at least ought to be, that new short cuts and inventions are coming up daily, to rob and defraud, as well as to do good and benefit mankind; and what troubles me just now is that so many of our good people are careless and indifferent in regard to the matter. They ought to learn, however, by sad experience; and it is the province of our home journals to protect hard-working honest people by holding up a warning. As an illustration, it is a splendid thing to encourage young people, especially young married people, in making a home of their own, to put their money into a little lot, and, later on, building a house. But even in so good an undertaking as this the greedy schemers—I would say *graffiers*, only I do not like the word—have been getting in their work. Read the following, which I clip from the *Woman's Home Companion*:

A party of teachers from a city college started one Saturday on a botanizing trip. They found themselves aboard a ferry boat with an excursion party and a band, all bound for a newly plotted suburb. Street cars decked with bunting awaited the party. The professors forgot their interest in botany, and, actuated solely by curiosity, they followed the crowd to the scene of real-estate operations.

On the ground owned by the promotion company surveyors were dashing around with interesting-looking blue prints in their hands. Half a hundred Italian laborers were grading streets and planting young trees. At the real-estate office, a pretty bungalow affair, smiling waiters dispensed light drinks and sandwiches. The band played, the crowd gathered around, and the auctioneer got busy. Lots started off right merrily at four hundred dollars. When they dropped to one hundred dollars each the professors became interested. They put their heads together and decided that here was a chance to start a suburban colony for their own kind. They would buy the lots and sell them at an advance to associates who had missed this wonderful excursion.

\*It was pretty hard work for a man of almost seventy, and it made me sweat more than I have for a long time; but, like "Nell Beverly," I felt all the better after I got a little used to it.

In spite of the fact that these men were presumably posted on current events, they did not know a fake real-estate auction when they saw it.

From the above you will notice there was a group of college professors—men who are employed to teach humanity, and, we might suppose, warn them against the very things that the whole crowd dropped into. I wish to call particular attention to the paragraph that says they would "buy the lots and sell them at an advance," etc. Without knowing it, these teachers, good honest men, have been duped into a gambling scheme. They had got a little of the craze for getting something for nothing in the way of speculation.

The *Sunday School Times* has recently been giving us some excellent editorials in regard to the difference between "investment" and speculation. I wish everybody might read them.

## POULTRY DEPARTMENT

CONDUCTED BY A. I. ROOT.

"NOTHING TO DO BUT GATHER THE EGGS."

Any short cut in managing poultry, or even in hatching chickens, that saves time and expense, helps us toward that ideal poultry establishment where the owner has "nothing to do but gather the eggs." Since I have been turning my attention to the matter of selecting the fertile eggs when starting an incubator, or selecting eggs that will be mostly fertile, I have been scanning the poultry journals for every thing I could find on the subject.

Several poultry journals have seen fit to give place to the following advertisement:

**POULTRY SECRET**—With my system you are able to detect in a minute a fertilized or non-fertilized egg before putting in the incubator. After a little practice you recognize at a glance a strong or weakly fertilized egg. A non-fertilized egg has so distinctive points that you can not make mistakes. Price \$1.00, with your written promise to reveal it to nobody else. A. Hoffbauer, Hornell, N. Y.

Just as soon as I saw it, off went the dollar. but I explained that I had several reasons for objecting to putting my name to any promise not to reveal any thing I have gotten hold of that may be of benefit to my neighbors. I told the advertiser if he could not send the secret without the promise not to reveal, he was to return the money. Of course I got the secret promptly, as I always have done.

As the secret is somewhat lengthy, and the owner of it has used illustrations, I need not copy it. He directs using a tester like that of Mrs. White, and says you can see the germs in a newly laid egg, which is true; for in testing Mrs. White's secret I marked a dozen eggs with a pencil, all of which showed the germ very plainly. Some of these eggs produced chickens, and a few of them did not. The proportions were just about the same as the number of fertile ones in my whole 70. Therefore the presence of visible germs proves nothing. But this Hoffbauer claims he has made the discovery that there is a peculiar mark, something like an X, on the outside of the

shell of every fertile egg, right over the germ. Right here things seem a little mixed, for, according to my understanding, this germ floats around. He claims that the male sperm is introduced into the egg just before the shell hardens, that it leaves a mark where it gets through, and with a little practice one can find this mark on every fertile egg. As I have scanned carefully quite a number of eggs, and found nothing of the kind, I shall have to pronounce it a failure unless he or somebody else explains things better. He sent me quite a pretty little thermometer. I did not order this, and he did not advertise it; but it occurred to me that his conscience might have troubled him for taking a dollar and not making any return of any value whatever.

Perhaps you may care to read the letter he sends along with the secret:

*Mr. Root:*—I am in receipt of your favor of the 18th with \$1.00, for which we extend our thanks. We enclose our booklet "To Select Fertilized Eggs," and send with the same mail a brooder thermometer prepaid. We have no doubt that you will be as successful with our method as are these big commercial poultry-raisers. If you have trouble in finding so many dead chicks in the shells, we might advise you not to handle the eggs yourself. Get a boy or girl. Some people are so full of animal magnetism streaming from their hands that they kill the embryo or germ by touching the egg. This is our dearly paid-for experience. Wishing you success in raising a lot of youngsters this season we beg to remain

Hornell, N. Y., March 23.

Yours respectfully,  
A. HOFFBAUER & Co.

"Animal magnetism streaming from their hands!" What do you think of that? If this man is given to superstition he may be honest, after all, and imagines he can find some mark somewhere on the egg that indicates fertility. In the same inclosure with the secret is a remedy for white diarrhea. Perhaps I had better give it:

The only remedy is to wipe off all eggs, before putting in machine, with alcohol-whisky. This will kill the germ without hurting the eggs. Used incubators and brooders should be cleaned with formalin.

"Alcohol-whisky!" I shall have to confess I do not know of any such thing; and I hope our poultry-keepers can give us some germicide that will do the business without the use of alcohol or whisky either. What is the matter of the formalin?

Now, in regard to this whole matter of selecting the fertile eggs when putting them in an incubator, I submitted what I have written in the past few numbers to the Cyphers Incubator Co., Buffalo, N. Y. They have a bureau of information, you know. Here is what they say:

I have no knowledge of any method that has been discovered to detect fertility or non-fertility of eggs the day they are laid or at any time before partial incubation, and I have been in the business many years as breeder, publisher, and manufacturer. An article is being advertised by a Buffalo firm which, it is stated, will detect fertility of eggs before incubation. I have not tried it. It is based upon the weight of the egg, I think. I can hardly believe that fertility or non-fertility could be distinguished by weight or floating properties. It is a fact that, if a single person possesses such a secret, his fortune would be made, and the fact that nobody has become rich by divulging such a method is proof enough to me that none exists.

Buffalo, N. Y.

ROBT. H. ESSEX.

Since the above was put in type I have secured the Magic egg-tester. It is advertised in a number of poultry-journals. Permit me to make some extracts from it:

A NEW DISCOVERY WHICH WILL POSITIVELY DETERMINE THE FERTILE EGG BEFORE INCUBATION.

"XX" means fertility. Every good egg registers at some point on the scale of the "The Breeders' Magic Egg-tester," according to its condition, and this wonderful little instrument tells in-

stantly whether an egg is fertile or not BEFORE incubation. The scale reads like a thermometer, and so easy that any 10-year old child can test eggs. The fertile eggs register at "XX," and the tester never fails to tell whether fertility is strong, weak, or absent.

Department B.

MAGIC EGG-TESTER WORKS,  
Buffalo, N. Y.

This wonderful instrument is a machine for getting the *specific gravity* of an egg. It will certainly be a good thing to tell a fresh egg; but the company sends out five considerable booklets to tell their customers that a fertile egg is *not* necessarily an impregnated one. They claim that most eggs are fertilized (more or less) unless there are altogether too many hens together for one male. Well, by selecting out the eggs that have the greatest specific gravity they claim you will not only get chickens, but chickens with greater vitality.

Once more, let me say this is something that our experiment stations should take up and test. I have urged long that our stations should decide which is a fraud and which is an honest invention, and it seems strange we do not get a report from some one of them. I am not sure they have a poultry-yard at our Ohio station. When I fill my incubator again I shall most assuredly give their claim a careful test. The price of the machine is \$2.00. See Essex's letter.

Now, out of a dozen eggs taken from a nest of White Leghorns, two were found so low on the scale that I would not use them for the incubator or hens; and one more that registered almost up to the unfertile egg makes three out of twelve that the machine throws out.

#### NAVIGATING THE AIR—THE WRIGHT BROTHERS UP TO DATE.

So little has been going on during the winter I have not thought best to keep a record; but just now I give you a glimpse of what is coming soon by the following clippings from that excellent magazine, *Aeronautics*, for March:

##### FRANCE.

The Wrights still hold the eyes of the world. Despite all that is being done in Europe, it has to be admitted that it is Wilbur Wright alone who is showing the real conquest of the air. Others are flying, but with a difference. Wright has shown that he can do almost as he pleases in the air. The month, however, has been principally spent, since the first flight at Pau with the new made-in-France Wright engine, on Feb. 3, in teaching his pupils, the Conte de Lambert and Paul Tissandier, and in receiving distinguished visitors. Except on a few days, when snow was falling and the cold was intense, Wilbur has flown every day two or three times. It has been noticed that he flies with ever increasing enjoyment. His obvious relish of his half-hour trips through the air has excited the greatest French enthusiasm.

##### ALFONSO LONGS TO FLY.

The next visitor was of still greater distinction. This was Alfonso XIII., the young king of Spain, who turned up at nine o'clock in the morning on Saturday, Feb. 20, and became wildly enthusiastic. He took off his coat and got into the machine, and afterward was so excitedly delighted that he insisted on remaining in his shirtsleeves. He was received by Hart O. Berg and the mayor of Pau, and, after shaking hands very heartily with the two Wrights and Miss Wright, asked every conceivable question, and made Orville tell him all about the accident at Fort Myer. Wilbur made a brilliant display for half an hour, doing every possible maneuver. After his return, and more questions had been answered, the king asked whether Wilbur would mind making another flight for him, taking one of his students with him. Count de Lambert was chosen, and, after a twelve-minute flight, the machine was brought back almost to the king's feet. The young monarch admitted that it was the temptation of his life to make a flight, and he could hardly tear himself away.

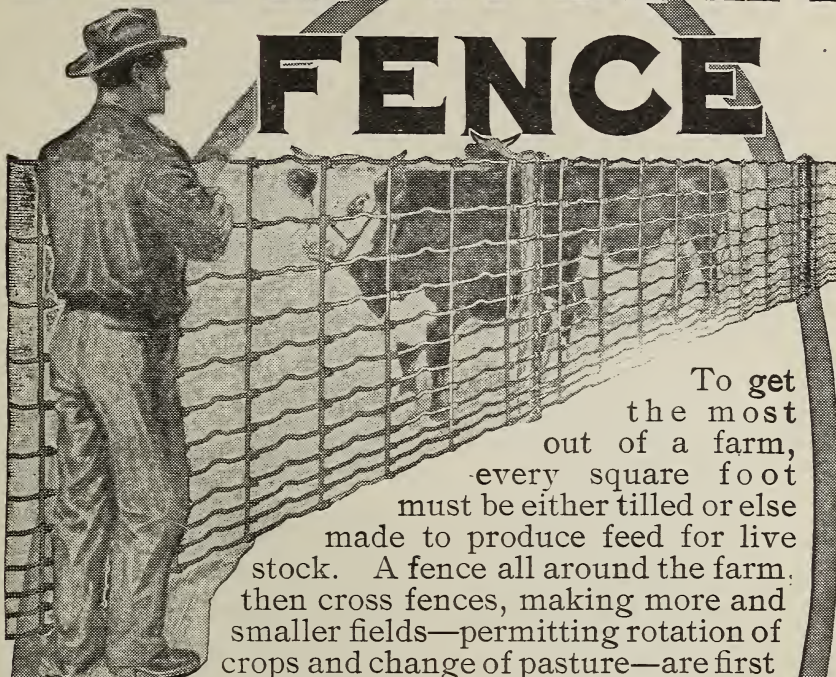
##### MISS WRIGHT'S FIRST FLIGHT.

Another interesting feature of the month was that Miss Wright made her first flight. This event took place on the 15th, and she

Continued on advertising page 29



# AMERICAN FENCE




To get the most out of a farm, every square foot must be either tilled or else made to produce feed for live stock. A fence all around the farm, then cross fences, making more and smaller fields—permitting rotation of crops and change of pasture—are first essentials in making possible maximum earnings.

Here are two great fences—the best square mesh and the best diamond mesh. We selected these two styles years ago, after careful study and advice from many of the most experienced and successful farmers, the correctness of which has been verified by actual results in the field. These fences are the simplest in construction; are made of any size or weight of wire desired and perfectly adapted to all uses and conditions.

If you want square mesh, buy American; if you like diamond, buy Ellwood. You can safely take the verdict of the millions of farmers who have tested and tried out these two great fences. Dealers everywhere, carrying styles adapted to every purpose. See them. Catalogue for the asking.

**AMERICAN STEEL & WIRE CO.**

Chicago New York Denver San Francisco



# ELLWOOD FENCE



## Get Our Prices NOW!



H. C. Phelps, Pres.

THIS means a big saving to YOU of \$26.50 on buggy shown here—same ratio of saving on over 125 other style vehicles and harness—because of our large factories, enormous purchases of material and perfected organization, which means high quality with big saving in manufacture.

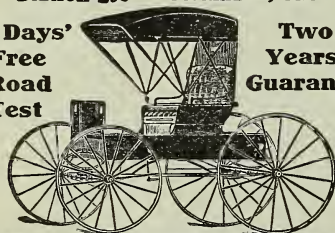
Because we sell direct to you from factory. We're going to give our customers the advantage of this saving. You never before had an opportunity like this to purchase a Buggy at such a low price. We make over 125 Styles of

## Split Hickory Vehicles

and a full line of Harness—everything made to order—many options given as to finish and trimmings. Let us send you our Big Free Book—it tells the whole story of "Split Hickory Vehicles"—and it's free for your name and address on a postal. Address

**H. C. Phelps, President**  
**The Ohio Carriage Mfg. Company**  
 "Makers of Split Hickory Vehicles"  
**Station 293 Columbus, Ohio**

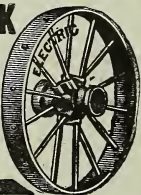
**30 Days' Free Road Test** **Two Years' Guarantee**



## SAVE YOUR BACK

Save time, horses, work and money by using an **Electric Handy Wagon**

Low wheels, broad tires. No living man can build a better. Book or "Wheel Sense" free. Electric Wheel Co. Bx 95, Quincy, Ill.



## GET IT GALLOWAY

My Great Buggy Proposition—IT'S NEW. Positively best ever made by any factory.

Saves You 33½ to 50% lowest prices, best proposition ever made in buggy history. Get it before a buggy of any kind. It helps you pay for buggy. Also harnesses, wagons, implements, etc. **WM. GALLOWAY CO.** 1656 Galloway St., Waterloo, Ia.



## Anthony Fence

There are others but the Anthony Fence is the only one that has Anthony quality and tied with the Anthony knot. We have a small hand sample of fence that we want to put in the hands of every buyer. It shows Anthony



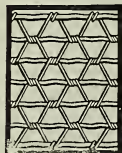
See That Knot

knot as it is in fence—compact, smooth, strong. No kink in line wires inside knot. Made in Anthony machines from tough wire. Equal length of line wires guaranteed. Write for hand sample and booklet, both mailed FREE. **THE ANTHONY FENCE CO.,** 26 Michigan St., Tecumseh, Mich.

## 15 Cents a Rod

For a 22-inch Hog Fence; 16¢ for 26-inch; 19¢ for 31-inch; 22 1-2¢ for 34-inch; 27¢ for a 47-inch Farm Fence. 50-inch Foultry Fence 31¢. Lowest prices ever made. **Sold on 30 days trial.** Catalog free. Write for it today.

**KITSELMAN BROS.,** Box 21, **MUNCIE, IND.**



## FENCE Strongest Made

Made of High Carbon Double Strength Coiled Wire. Heavily Galvanized to prevent rust. Have no agents. Sell at factory prices on 30 days' free trial. We pay all freight. 37 heights of farm and poultry fence. Catalog Free. **COILED SPRING FENCE CO.** Box 101 **Winchester, Indiana.**

## FENCE AT PANIC PRICES

We purchased raw material cheap during the panic, you get the saving. These low prices won't last long. Write at once for catalogue and prices. **Anchor Fence & Mfg. Co.,** Department V, **Cleveland, Ohio**



## 48 IN. FENCE 29c

Best high carbon coiled steel wire. Easy to stretch over hills and hollows. **FREE** Catalog—fences, tools. Buy from factory at wholesale prices. Write today to Box 88 **MASON FENCE CO., LEESBURG, O.**



## Quicker Than 3 Men

You can do more work and do it easier and in less time than 3 men can DO with pick and spade, if you use the wonderful

### IWAN POST HOLE AUGER

No hired help, no blisters or backaches. Bore right into wet or dry clay, sand, gravel, gumbo—for 2-ft. post holes or 50-ft. wells. Costs little, saves much. Pays for itself on one job. Write today for free booklet telling all about it, and letters from men who use it. **Iwan Bros., Dept. R, South Bend, Ind.**



## SPRAY PUMPS



Deming Spray Pumps are the most carefully, skillfully, hand-fitted pumps made—right there is the main reason they never fail to run easily with little wear. 24 Varieties. Catalogue with Spraying Chart **FREE**. Add 4 cents postage for guide book on Spraying.

**THE DEMING COMPANY,** 690 Depot St., **Salem, Ohio.**





## Here Is Something New From Kalamazoo

Prove for yourself in your own home, that the Kalamazoo is the most perfect—most economical—most satisfactory range for you to use—Your money back if it's not.

Send for Catalog No. 416 with special terms and compare Kalamazoo prices with others

### Cash Or Time Payments

We want every housewife to know the comfort and convenience of a Kalamazoo in her home. You can buy on **easy time payments** or pay cash if you like. Either way—you save \$10 to \$20 on any stove in the catalog. We make it easy for responsible people to own the best stove or range in the world.

We Pay the Freight

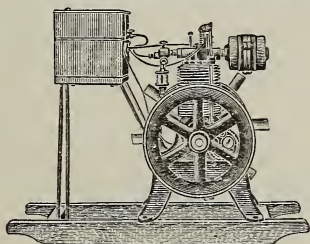
Kalamazoo Stove Co.  
Kalamazoo, Mich.

## "A Kalamazoo Direct to You"

## BE SURE TO GET THIS!

Every reader of GLEANINGS who is interested in farm power of any kind should send to-day for our catalog of the

### WHITE LILY GASOLINE-ENGINE



It is the best, simplest, and cheapest 3-H. P. gasoline-motor in the world. Four-cycle—air-cooled—automatically governed.

### IT'S THE ENGINE YOU NEED

Will do more work with less trouble than any other 3-H. P. engine. Runs smoothly without jar or vibration. Absolutely dependable. Get our prices and special proposition. Write to-day.

**WHITE LILY MFG. CO.**

1546 Rockingham Road DAVENPORT, IOWA



## IN SUNNY VIRGINIA

**\$1,650.00** BUYS THIS BEAUTIFUL HOME

and 40 acres of best fruit and general farming land, including good barn, corncrib, tool shed and chicken house, all new. Rich soil, fine climate, good markets, abundant water, excellent neighbors and best schools.

**OTHER LANDS \$10. PER ACRE & UP.**

**Cheap Excursions Twice a Month.**

Sit right down and write for beautiful illustrated booklet, list of farms, etc., to

F. H. LABAUME, Agrl. and Indl. Agt.  
Norfolk & Western Ry., Roanoke, Va.  
Dept.

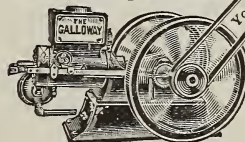
## \$50 to \$300 SAVED

We are manufacturers, not merchants. Save dealers, jobbers and catalog house profit. I'll save you from \$50 to \$300 on my High Grade Standard Gasoline Engines from 2 to 22-H.-P.—Price direct to you lower than dealers or jobbers have to pay for similar engines in carload lots for spot cash.

### GALLOWAY

Price and quality speak for themselves and you are to be the sole judge.

Sell your poorest horse and buy a **5-H.-P. only \$119.50**



**Direct From My Factory on 30 Days' Free Trial.** Satisfaction or money back. Write for special proposition. All you pay me is for raw material, labor and one small profit. Send for my big **BOOK FREE.**

Wm. Galloway, Pres.  
Wm. Galloway Co.  
1685 Galloway Station  
Waterloo, Iowa

## THE GUIDE TO NATURE

EDITED BY EDWARD F. BICELOW

A profusely illustrated monthly magazine for adults devoted to commonplace nature with uncommon interests.

### EDUCATION AND RECREATION

- For all students and lovers of nature.
- For people who see and think.
- For those who enjoy life in the country or suburbs.
- For growers of plants and pets.
- For amateur astronomers and all who "look up to the stars"
- For users of the microscope peering into the wonders of minute life.
- For portrayals of nature interests and beauties on the sensitive plate.
- For members of the Agassiz Association.
- For readers of the best nature literature.

Not emotional and sentimental but thoroughly informational and practical. Definite guidance for those who wish to know.

**Single copy, 10 cts. Subscription, \$1 per year**  
Less than one year at single-copy rates.

**THE AGASSIZ ASSOCIATION**  
ARCADIA, SOUND BEACH, CONN.



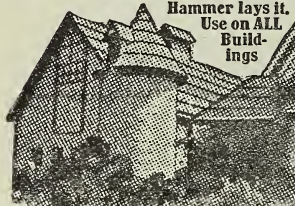
# Freight <sup>On</sup> Breese Bros. Rubber Roofing

## Prepaid

DON'T spend a dollar for roofing until you have seen and tested the old, reliable Breese Bros. guaranteed waterproof, fire-resisting durable Rubber Roofing. Made by our own special process, of long-fibre wool felt, saturated in asphalt.

**Free Cement and Special Roofing**

Nails inclosed in each roll.  
Hammer lays it.  
Use on ALL  
Build-  
ings



Send for Free Samples and Booklet

Get these samples of 1-ply, 2-ply and 3-ply roofing. Put them to every test you can think of and prove to your own satisfaction that Breese Bros. Rubber Roofing is the highest quality roofing on the market. We give the

**Longest Guarantee**

Send for samples or order now on our strong guarantee of satisfaction or money back. We pay freight to all points east of the western boundary line of Minnesota, Iowa, Missouri, and north of south line of Tennessee. Don't delay ordering; these special prices may not be offered to you again. Take advantage of them and write now, today.

THE BREESE BROS. CO., Roofing Dept. 76, Cincinnati, Ohio

### Lowest Factory Prices

Freight Prepaid on 100 lbs. or more

35-lb. Roll—108	<b>\$135</b>
Sq. Ft.—1-Ply	
45-lb. Roll—108	<b>185</b>
Sq. Ft.—2-Ply	
55-lb. Roll—108	<b>225</b>
Sq. Ft.—3-Ply	

Order today, or write for Samples and Booklet

## FIX YOUR ROOF

**5c Per Square.**—We will guarantee to put any old leaky, worn-out, rusty, tin, iron, steel, paper, felt or shingle roof in perfect condition, and keep it in perfect condition for 6c per square per year.

**Roof-Fix**

The Perfect Roof Preserver, makes old, worn-out roofs new. Satisfaction guaranteed or money refunded. Our free roofing book tells all about it. Write for it today

The Anderson Manufacturing Co., Dept. 24 Elyria, Ohio

### IT PAYS TO SPRAY

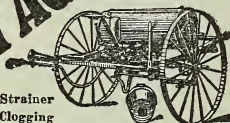
The Iron Age 4-row Sprayer gives perfect satisfaction. Puts solution just where needed and in fog-like mist. Pump delivers spray under high pressure, thus reaching every part of vine, effectually killing bugs and preventing blight. Has Orchard Spraying attachment. Write for free catalog illustrating this and other Iron Age tools.

SAVE  
HIRED  
HELP

Iron Age  
Four-Row  
Sprayer

**IRON AGE**

Nozzle Strainer  
Prevents Clogging



BATEMAN MFG. CO., Box 120 S, GREENLOCH, N. J.

## SAVE MONEY ON ROOFING

**\$1.00**

buys full roll (108 sq. ft.) of strictly high grade roofing, either rubber or flint coat surface, with cement and nails complete.

Most liberal offer ever made in first class roofing. Better than goods that sell at much higher prices. Don't spend a dollar on roofing until you have seen

## UNITO ASPHALT ROOFING

You send no money when you order Unito Roofing. Satisfaction Guaranteed. Write today for free samples for test and comparison and our unparalleled selling plan.

UNITED FACTORIES CO. Dept. A38, Cleveland, O.



## ANSWER

This Ad and Get My Big FREE Book and Save \$50

Buy direct from the biggest spreader factory in the world—My price has made it—Save dealer jobber and catalog house profit. No such price as I make on this high grade spreader has ever been made before in all manure spreader history. Here's the secret and reason: I make you a price on one based on a 25,000 quantity and pay the freight right to your station. You only pay for actual material, labor and one small profit, based on this enormous quantity on a

## GALLOWAY

Get my brand new proposition with proof—lowest price ever made on a first class spreader, with my agreement to pay you back your money after you try it 12 months if it's not a paying investment.

How's that for a proposition? If I did not have best spreader I would not dare make such an offer. 20,000 farmers have stamped their O. K. on it. They all tried it 30 days free just like I ask you to try it—30 DAYS FREE. Five Sizes—including New Complete Steel Gear Spreader—70-bu. Size.

Drop me a postal, and say—"Galloway, send me your new proposition and Big Spreader BOOK FREE with low prices direct from your factory."

Nobody can beat it. Freight Prepaid

WM. GALLOWAY CO.



Fits  
Your  
Own  
Wagon

1689  
Galloway  
Station,  
Waterloo, Ia.

## PUMPING WATER

We make Pumps—over 40,000 of them each year. That is our business—naturally we know what each particular case requires. This is our "Panama" lift pump for large cisterns and wells, 25 ft. or less in depth. It throws  $\frac{3}{4}$  gal. water each stroke.

Tell us depth of your well or cistern—whether dug or cased—amount of water you need; whether hand or windmill power is used, and ask for free circular and prices.

We make over 2000 kinds of pumps—so we can surely suit you. Look us up and address as follows—

THE CRESTLINE MFG. CO.  
Pumps—Sprayers—Hoses  
CRESTLINE, OHIO, U. S. A.

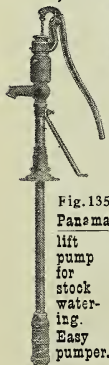


Fig. 135  
Panama  
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Easy  
pumper.



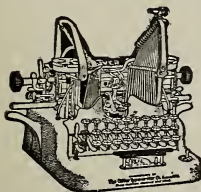
# 17 Cents a Day Buys an Oliver

This amazing offer—the New Model Oliver Typewriter No. 5 at 17 cents a day—is open to everybody, everywhere.

It's our new and immensely popular plan of selling Oliver Typewriters on little easy payments. The abandonment of long-hand in favor of clean, legible, beautiful *typewriting* is the next great step in human progress.

Already—in all lines of business and in all professions the use of *pen and ink* is largely restricted to the writing of *signatures*.

Business Colleges and High Schools, watchful of the trend of public sentiment, are training a vast army of young people in the use of Oliver Typewriters.



The prompt and generous response of the Oliver Typewriter Company to the world-wide demand for *universal typewriting*, gives tremendous impetus to the movement.

The Oliver, with the largest sale of any typewriter in existence, was the logical machine to take the initiative in bringing about the *universal use* of typewriters. It *always* leads!

## SAVE YOUR PENNIES AND OWN

# The OLIVER Typewriter

### THE STANDARD VISIBLE WRITER

This "17-Cents-a-Day" selling plan makes the Oliver as easy to own as to rent. It places the machine within easy reach of every home—every individual. A man's "cigar money"—a woman's "pin money"—will buy it.

Clerks on small salaries can now afford to own Olivers. By utilizing spare moments for practice they may fit themselves for more important positions.

School boys and school girls can buy Olivers by saving their pennies.

You can buy an Oliver on this plan at the regular catalog price—\$100. A small first payment brings the machine. Then you save 17 cents a day and pay monthly.

And the possession of an Oliver Typewriter enables you to *earn money* to finish paying for the machine.

### Advantages

The Oliver is the most highly perfected typewriter on the market—hence its 100 per cent efficiency.

Among its scores of conveniences are:

- the Balance Shift
- the Ruling Device
- the Double Release
- the Locomotive Base
- the Automatic Spacer
- the Automatic Tabulator
- the Disappearing Indicator
- the Adjustable Paper Fingers
- the Scientific Condensed Keyboard

### Service Possibilities

The Oliver Typewriter turns out more work—of better quality and greater variety—than any other writing machine. Simplicity, strength, ease of operation and visibility are the corner stones of its towering supremacy in

- Correspondence
- Card Index Work
- Tabulated Reports
- Follow-up Systems
- Manifolding Service
- Addressing Envelopes
- Working on Ruled Forms
- Cutting Mimeograph Stencils.

Can you spend 17 Cents a day to better advantage than in the purchase of this wonderful machine?

Write for Special Easy-payment Proposition or see the nearest Oliver Agent.

**The Oliver Typewriter Co.**  
911 Huron Road, Cleveland, Ohio.

## Will you accept this business book if we send it free?

Sign and mail the coupon below. Send no money! Take no risk.

One hundred and twelve of the world's master business men have written ten books—2,070 pages—1,407 vital business secrets, ideas, methods. In them is the best of all that they know about

- |                |                     |   |
|----------------|---------------------|---|
| —Purchasing    | —Salesmanship       | —Position-Getting   |
| —Credits       | —Advertising        | —Position-Holding   |
| —Collections   | —Correspondence     | —Selling Plans  |
| —Accounting    | —Man-Handling       | —Handling Customers   |
| —Cost-keeping  | —Man-Training       | —Business Generalship                                       |
| —Organization  | —Office Systems     | —Competition Fighting                                       |
| —Retailing     | —Short-cuts and     | and hundreds and hundreds of other vital business subjects. |
| —Wholesaling   | Methods for every   |   |
| —Manufacturing | line and department |   |

A 9,059-word booklet has been published describing, explaining, picturing the work. Pages 2 and 3 tell about managing businesses great and small; pages 4 and 5 deal with credits, collections and with rock-bottom purchasing; pages 6 and 7 with handling and training men; pages 7 to 12 with salesmanship, with advertising, with the marketing of goods through salesmen, dealers and by mail; pages 12 to 15 with the great problem of securing the highest market price for your services—no matter what your line; and the last page tells how you may get a complete set—bound in handsome half morocco, contents in colors—for less than your daily smoke or shave, almost as little as your daily newspaper.

Will you read the book if we send it free?  
Send no money. Simply sign the coupon.

**The System Co., 151-153 Wabash Ave., Chicago**

If there are, in your books, any new ways to increase my business or my salary, I should like to know them. So send on your 16-page free descriptive booklet. I'll read it. 210-4-15

Name \_\_\_\_\_  
Address \_\_\_\_\_  
Business \_\_\_\_\_  
Position \_\_\_\_\_

## UNCLE SAM IS A TRUSTY MESSENGER

His excellent postal service brings this bank to your door.

Here is a convenient and safe depository for your savings or funds of any kind.

And your money earns

## 4% Int. Compounded Semi-annually

Our booklet, "Banking by Mail," which explains fully, sent free.

Resources \$800,000

Established 1892

**THE SAVINGS DEPOSIT  
BANK COMPANY**  
MEDINA, OHIO



## This is The New Hired Man

### A Telephone On The Farm

will do more work and do it faster and better and cheaper than the best farm hand and takes up considerable less room in the farm house.

When there's sudden, serious illness in the family—when quick action of any sort is demanded—you can't estimate its value in dollars.

You pay for its services only when you use it—about one cent a call is the cost—and every time you use it, it saves you time, money, labor.

### Stromberg-Carlson Telephone

equipments can be secured by you and your neighbor at most reasonable prices and our directions are so simple that you can put up the line yourselves, without any trouble.

#### Ten Men Can Organize a Successful Independent System

Write us today for our book, "How The Telephone Helps The Farmer," 21st edition, and other literature. We send it free.

#### Stromberg-Carlson Telephone Manufacturing Company

Rochester, N. Y.

Chicago, Ill. Kansas City, Mo.  
Address Nearest Office

### THE "BEST" LIGHT



One burner will give as much light as ten ordinary oil lamps; six 16 candle power electric bulbs—six 16 candle power gas jets or 5 acetylene gas jets. Costs 2 cts. per week. Produces a pure, white, steady, safe light. Over 200 styles. Every lamp warranted. Agents wanted. Write for catalog.

THE BEST LIGHT CO.  
306 E. 5th St., Canton, O.



### WHITEWASHING and disinfecting with the new

"Kant-Klog" Sprayer gives twice the results with same labor and fluid. Also for spraying trees, vines, vegetables, etc. Booklet free. Address

Rochester Spray Pump Co.  
32 East Av., Rochester, N. Y.



### BEFORE ORDERING BERRY-CRATES AND QUART BASKETS

write for our catalog and special prices.  
H. H. Aultfather, box 100, Minerva, O.

## THIS BOOK SENT TO YOU FREE



**Learn Dressmaking At Home**  
Qualify yourself to command a good income. Start in business for yourself. Many now earn \$25 a week. This course enables you to Dress Better at One-Half the Usual Cost by teaching you to do your own sewing. The American System is most simple and complete; easily learned; meets every requirement. 10,000 students and Graduates. Write today for free book.  
American College of Dressmaking  
1014 Reliance Bldg., Kansas City, Mo.

## \$33<sup>50</sup> AND UP Galloway



### "BATH IN OIL"

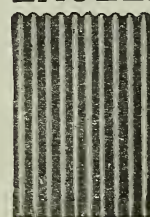
High Grade Separator—Direct  
Save \$25 to \$50 direct at our factory price—freight prepaid. Get the only Separator that runs in "Bath of Oil," like a \$5,000 automobile. This alone is worth \$50 extra, but costs you nothing extra.

### 90 Days'

#### Farm Test—Freight Prepaid

Why pay \$85 to \$110 to dealers or agents who cannot sell you a separator equal to the Galloway—closest skimmer—easiest run—easiest cleaned—10-yr. guarantee. Send for **BOOK FREE**  
WM. GALLOWAY CO.  
1683 Galloway St., Waterloo, Ia.

## EXCELL IRON ROOFING and STEEL & SIDING



Direct To You from our own factory at lowest factory prices. We are manufacturers and handle no 2nd hand nor shortlength stuff. Every part of our roofing and siding is made in our factory from genuine Charcoal Iron, Double Refined Fuddled Iron or Steel. Put on the kind of roof that wears. Ours is guaranteed. If it isn't the best you can buy anywhere, don't pay for it. Easy to lay. No experience needed. Tell us about your building and let us quote you factory prices. Write for Metal Goods Catalog. It is free.

THE UNITED FACTORIES CO.  
Dept. No. R38 Cleveland, Ohio.

**SPRAY** Your Fruits, Crops, Poultry Houses, and do whitewashing with The **AUTO-SPRAY**. Factory price and guaranteed to satisfy. Fitted with Auto Pop Nozzle does the work of three ordinary sprayers. Used by Experiment Stations and 300,000 others. We make many styles and sizes. Spraying Guide Free. Write for book, prices and Agency Offer. **The E. C. Brown Co.**  
20 Jay Street, Rochester, N. Y.



To prove that our **FREE** Blizzard Belt Evergreens will grow in all parts of the country we offer to send 6 Fine Spruces 4 to 12 ft. tall free to property owners. Wholesale value and mailing expense over 30 cents. To help, send 5 cents or not as you please. A postal will bring the trees and our catalog containing many colored photo plates of our choice Blizzard Belt Fruits. Write today. The Gardner Nursery Co., Box 26, Osage, Ia.

## 850,000 GRAPEVINES

69 Varieties. Also Small Fruits, Trees, &c. Best Rooted Stock. Genuine, cheap. 25 mailed for 10c. Descriptive price-list free. Lewis Roesch, Box A, Fredonia, N. Y.



## Get My Book Before Too Late For Chicken Time



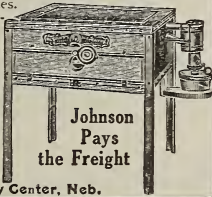
Johnson says: Don't delay too late—better hurry up and send your name. It's most May time. My Big Poultry Book is better than ever—every page of 200 and every photograph out of over 1200 a poultry lesson. Just find out about

### Old Trusty Incubator

Over 100,000 in use. 40, 60 or 90 Days' Trial, for 3 Hatches.

10-Year Guarantee. 75 per cent better hatches guaranteed. Don't pay two prices—my price is under \$10 complete ready to hatch, sent promptly, freight prepaid east of the Rockies. Get my Big, Free Book.

M. M. Johnson  
Incubator Man, Clay Center, Neb.



Johnson  
Pays  
the Freight



We ship  
quick  
from St.  
Paul, Buf-  
falo, Kansas  
City or Racine

**\$7.55 Buys  
the Best  
140-Egg**

**Incubator ever Made  
Freight Prepaid**

Double cases all over; best copper tank; nursery, self-regulating. Best 140-chick hot-water Brooder, \$4.50. Ordered together \$11.50. Satisfaction guaranteed. No machines at any price are better. Write for book today or send price and save waiting.

Belle City Incubator Co., Box 63 Racine, Wis.

## World's Record



for hatching, and 648 first prizes won by the

### Reliable Incubator

Perfect ventilating, double heating system, inside heater, and automatic regulator—a great fuel saver

Send today for FREE Poultry Book—valuable information on poultry raising and incubators.

Reliable Incubator & Brooder Co., Box D 49, Quincy, Ill.

## Greider's Book On Poultry

Concise, practical. How to make money with poultry; information as to

buildings, treatment of diseases, etc. Fifteen attractive chromes;

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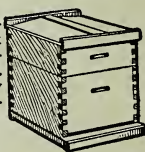
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the only super that has so greatly reduced time, labor, and storage space in the production of comb honey. Super complete for 8-frame hive, made up, 1, 75c; 5, \$3.65. Super complete for 8-frame hive, in the flat, 1, 70c; 5, \$3.45. Sold only by

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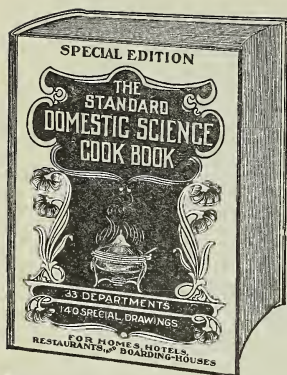
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Complete stock on hand, as our plant has been running steadily so as to take care of the demand for **bee-supplies** the early part of the coming season. We are practically overstocked at this time and advise those in need of **bee-supplies** to order now (shipments may be delayed until you want the goods) before the contemplated advance in prices all along the line. Lumber is dearer and labor has never been so high, but we agree to protect our patrons at present prices upon receipt of their orders at this time.

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## STANDARD DOMESTIC SCIENCE COOK-BOOK.

The book is just what its name implies. It treats of the science and art of housekeeping, and gives many practical suggestions.

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Ida Lewis Mason, special teacher of sewing in the Chicago schools, edits the department of domestic economy relating to the judicious expenditure of money, sewing, laundry, and the management of the modern kitchen. What is said of the fireless cook-stove makes its service clear, and the dictionary of French terms will be appreciated by American cooks.

The Chicago *Evening Post* says of the book: "The literature of the household has received a valuable addition to its practical books in the shape of the Standard Domestic Science Cook-Book. The title, 'cook-book,' fails to explain the extensive information which the volume contains."

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Here is something that will be of benefit to the whole household, and will make a nice present for any woman member of your family. All its hints and suggestions are practical, and the book is bound in washable white oil-cloth. There is a certain fascination about a cook-book, and no woman can have too many. Even though you may have one which you consider good, we are sure you will find in this new book many helpful suggestions and new recipes.

By purchasing a large quantity of these books we are able to get them at a low price from the publishers, and can make a rate of only \$1.50 for a year's subscription to GLEANINGS IN BEE CULTURE and the STANDARD DOMESTIC SCIENCE COOK-BOOK. The book alone is usually sold for \$2.50. Send in your order now and get one before the supply is exhausted. You may have the book sent to your own address and the subscription entered for some friend if your own subscription is already paid in advance. Send to-day!

#### SOME OF THE DEPARTMENTS AND SPECIAL FEATURES

1. Soups, Stocks
2. Fish, Cheese Straws
3. Shell-fish and Oysters
4. Meats, Fresh and Salt
5. Poultry, Stuffings
6. Game, How to Serve
7. Sauces, Gravies
8. Salads, Dressings
9. Vegetables, Greens
10. Entrees, Side Dishes
11. Desserts, Pudding Sauces
12. Cereals, Breakfast Foods
13. Eggs, Omelettes
14. Bread, Yeast
15. Cakes, Fillings
16. Pastry and Pies
17. Fried Cakes, Cookies, etc.
18. Pickles and Preserves
19. Miscellaneous Dishes
20. Artistic Cooking
21. Sick-room Recipes
22. Household Drinks, Cordials
23. Candy, Candied Fruits
24. Chafing-dish, Dainty Dishes
25. Brides' Department
26. Fruits, Nuts
27. Menus for All Occasions
28. Marketing, How to Buy
29. Why and How Hints
30. Seasoning and Flavoring
31. Practical Carving
32. Domestic Economy
33. The Modern Home.

## The A. I. Root Co., Medina, Ohio



## CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

### Honey and Wax for Sale.

**FOR SALE**—Finest quality of raspberry-basswood blend of extracted honey at 9 cts. per lb.; also good quality clover-basswood blend of extracted honey at 8 cts. per lb., f. o. b. at producing point. All in new 60-lb. cans, two in a box. Sample and circular free.  
E. D. TOWNSEND, Remus, Mich.

**FOR SALE**—Comb and extracted honey, either car lots or less. Extracted white in 60-lb. cans, single case, 7½ cents; 5 cases or more, 7 cents. Samples furnished upon application.  
C. C. CLEMONS PRODUCE CO., Kansas City, Mo.

**FOR SALE**—Choice extracted honey for table use, gathered from clover and basswood—thick, well ripened, delicious flavor. Price 9 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts.  
J. P. MOORE, Queen-breeder, Morgan, Ky.

**FOR SALE**—Clover and amber honey. Table quality. Write for prices, stating your needs.  
C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

**FOR SALE**—Honey by the barrel or case—extracted and comb; a bargain in honey. Write now.  
JOHN W. JOHNSON, Box 134, Canton, Mo.

**FOR SALE**—Fine extracted white-clover honey; also light amber fall honey, put up in barrels, 60-lb. and 10-lb. cans. Write for prices.  
DADANT & SONS, Hamilton, Illinois.

**FOR SALE**—White-clover and light-amber extracted honey, best quality, 60-lb. cans. Write for free sample.  
W. H. SETTLE, Gridley, Ill.

**FOR SALE**—Clover and amber honey, fine quality for table use, in 60-lb. cans; 8 cts. for clover, 7 for amber. Single can, ½ ct. more.  
C. H. STOROCK, Durand, Ill.

**FOR SALE**—Fine quality table honey in 60-lb. cans; alfalfa, basswood, or amber.  
ROBT. A. HOLEKAMP & SON,  
4263 Virginia Avenue, St. Louis, Mo.

**FOR SALE**—Clover extracted honey of finest quality in 60-lb. cans. Also amber-colored.  
J. F. MOORE, Tiffin, O.

**FOR SALE**—About 500 lbs. of nice comb honey at 12 cts. per lb. at Urss, Ill.  
J. A. THORNTON.

### Honey and Wax Wanted.

**WANTED**—Comb, extracted honey, and beeswax. State price, kind, and quantity.  
R. A. BURNETT, 199 South Water Street, Chicago, Ill.

**WANTED**—Genuine Florida orange-blossom, New York buckwheat, and white-clover extracted honey, any quantity.  
THE FRISBEE HONEY CO., Denver, Col.

**WANTED**—Beeswax, will pay 31 cts. cash or 33 cts. in trade delivered. Send for catalog.  
W. D. SOPER, Jackson, Mich.

### Help Wanted

**WANTED**—A young man with some experience to help in a bee-yard. Write experience, and wages wanted.  
J. M. CORNELIUS, Sterling, Col.

**WANTED**—Man to work with bees. State age, experience, and wages would accept, we to furnish board.  
THE ROCKY MOUNTAIN BEE CO., Berthoud, Col.

### Situations Wanted

Who can use a bee-keeper of 18 years' experience, with small family? W. WHITE, Rt. 3, Hickman Mills, Jackson Co., Mo.

## Wants and Exchanges.

**WANTED**—Several hundred colonies of bees in lots of 25 and up, on Hoffman or Danz. frames in the following States: Delaware, Maryland, Eastern Pennsylvania, and Eastern New York.  
Address Box 16, Gleanings in Bee Culture, Medina, O.

**WANTED**—Bees in exchange for fire-proof safe, feed-cutter, spring wagon, blacksmith shop, a concrete-block machine, or an automobile, within reasonable shipping distance of Ashabula, O.  
S. H. RICKARD, North Side, Pittsburg, Pa.

**WANTED**—Bees in any old hives, in large or small lots. Extracting combs also wanted. Give full details in first letter; must be a bargain.  
E. W. BROWN, Morton Park, Cook Co., Ill.

**WANTED**—To exchange a Columbia chainless bicycle, in first-class order, nearly new, cost \$75.00, for bees. For particulars address  
FRED HOLTEE, Southold, Suffolk Co., N. Y.

**WANTED**—To send you catalogs of smokers and bee-supplies for the fun of it, if we don't get a cent; try us by sending your address and your friends'.  
F. DANZENBAKER,  
Norfolk, Va., or Medina, Ohio.

**WANTED**—50 to 100 three-frame nuclei, with queen, also full colonies. Give price and particulars.  
W. C. DAVENPORT, 4166 Central St., Chicago, Ill.

**WANTED**—Fifty eight-frame shallow extracting-supers, Hoffman frames; prefer wide ends, spacing 7 to super.  
A. MOTTAZ, Utica, Ill.

**WANTED**—Refuse from the wax-extractor, or slumgum. State quantity and price.  
OREL L. HERSHISER,  
301 Huntington Ave., Buffalo, N. Y.

**WANTED**—Modern engine lathe, not over 24-in. swing; second-hand.  
GEO. RALL MFG. CO., Galesville, Wis.

**WANTED**—200 stocks or less of bees within 150 miles of Detroit.  
A. W. SMITH, Birmingham, Mich.

**WANTED**—Bees. State quantity and price, kind of hive, etc. "F," care of H. H. JEPSON, 182 Friend St., Boston, Mass.

**WANTED**—25 second-hand hives with Hoffman frames.  
WM. CRAIG, P. M., Luce, Mich.

**WANTED**—A printing-outfit.  
RAY BATES,  
Shenandoah, Page Co., Iowa.

## Souvenir Post Cards.

Eight beautiful birthday, Easter, St. Patrick's day, or assorted post cards mailed for 15 cts., or 15 for 25 cts.; regular 2 for 5 cts. cards.  
M. T. WRIGHT, Medina, Ohio.

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Twenty-five sheets of fine-fabric writing-paper, die-stamped with any two initials. Colors, 50 cents; gold or silver, 60 cents. Envelopes to match. Postage paid.

ART STATIONERY COMPANY,  
Dept. 4, 4413 Woburn Ave., Cleveland, O.

## Real Estate.

Land for sale in Uvalde Honey Belt, by Asherton Land and Townsite Co.  
E. A. ARMSTRONG, Asherton, Texas.

**FOR SALE**—My bee-ranch of two acres of land and work-shop; also 118 colonies of bees; a fine bee location, and no disease. Write for prices.  
S. E. ANGELL, Harpers Ferry, Iowa.

## Door and Window Screens.

Made to order. Ask us for our illustrated screen-door catalog. We also do woodwork in the specialty line.  
MEDINA WOODWORKING CO., Medina, Ohio.

## Bees and Queens

**FOR SALE.**—Colonies of Golden or Leather-colored Italians, strong and healthy, ready to do business at once, in 10-frame first-class Dov'd and Danz. hives, combs built straight from full sheets of fdn., at \$6.00 per colony; two or more, \$5.50 each. Queens almost one year old. Hives are securely bound with strap iron and 2-inch staples so they bear shipment better. Danz. supers with sections and 1-inch starters, etc., at \$1.00 each extra. JOSEPH W. LEIB, 563 S. Ohio Ave., Columbus, O.

Missouri-bred Italian queens; great hustlers in sections; cap white, and gentle; cells built in strong colonies, mated from two-frame L. nuclei. Select untested, \$1.00; tested, \$1.50; breeders, \$3.00. Two L. frame nucleus with laying queen, \$3.00; ten for \$25.00; virgins, 50 cts. each; \$5.00 per dozen. I guarantee satisfaction and safe arrival. L. E. ALTWEIN, St. Joseph, Mo.

**FOR SALE.**—Moore's strain and golden Italian queens, untested, \$1.00; six, \$5.00; twelve, \$9.00. Carniolan, Banat, and Caucasian queens, select, \$1.25; six, \$6.00; twelve, \$10.00. Tested, any kind, \$1.50; six, \$8.00. Choice breeders, \$3.00. Circular free. W. H. RAILS, Orange, Cal.

**FOR SALE.**—After March, fine Italian, Carniolan, and Caucasian queens; virgins, each, 40 cts.; dozen, \$4.50; untested, 75 cts. each; dozen, \$8.50. Orders booked now. Safe arrival and satisfaction guaranteed. EDWA. REDDOUT, Bradentown, Fla.

**FOR SALE.**—100 colonies of bees in chaff hives and packing-boxes, located in two places; clover and raspberry and buckwheat for 300; two honey-houses, and extractors and supers. W. L. COGGSHALL, Groton, N. Y.

**FOR SALE.**—Seven colonies bees, Italians and hybrids, five in ten-frame hives; also 12 supers,  $\frac{3}{4}$  sections, Alex. veil, shipping-cases, smoker, A B C and X Y Z, new. Route 68. ERNEST W. TRACHSEL, Helena, Mo.

**FOR SALE.**—20 colonies pure Italians in Root's 10 L. frame Dovetailed hives, at \$4.50 each; also 30 hives as above described, 25 shallow extracting supers, and 12 Danz. box honey supers, all in use two seasons, at Root's catalog rates in flat for lots of ten. WILSON T. BERGER, Watstown, Pa. Rt. 1.

Queens that will convince you that my famous stock is superior to all. Untested, 50 cts. each; select untested, 75 cts. each; tested, \$1.00; nuclei, \$1.00 per frame without queen. H. A. ROSS, 1709 Upper Second St., Evansville, Ind.

**FOR SALE.**—100 colonies of Italian bees on wired crosswise Hoffman frames 12 in a hive; requeneed last year; \$4.50 each; 20 at \$4.00 each; fixtures at half price to those who buy the bees. Route 35. MRS. S. WILBUR FREY, Sand Lake, Mich.

**ITALIAN QUEENS.**—Ready, 1909 list of Mott's strain of Red-clover and Golden. Leaflet, How to Introduce Queens, 15 cts.; leaflet, How to Increase, 15 cts.; one copy of each, 25 cts. E. E. MOTT, Glenwood, Mich.

5000 three-band Italian queens ready to mail March 1. Untested, 75 cts.; tested, \$1.00; breeders, \$5.00. Ask for prices in large quantities. W. J. LITTLEFIELD, Little Rock, Ark.

**FOR SALE.**—About 40 colonies of Italian bees in eight-frame hives; also comb-honey supers with sections. GUSTAVE GROSS, Lake Mills, Wis.

**FOR SALE.**—1000 colonies of bees with fixtures; run principally for extracted honey. DR. GEO. D. MITCHELL & Co., 340 Fourth Street, Ogden, Utah.

**FOR SALE.**—300 nuclei with good queens for spring delivery. Place orders now, and know you get them. D. J. BLOCHER, Pearl City, Ill.

Italian queens and nuclei; two-frame nucleus with queen, \$2.50; tested queen, \$1.00; 6 for \$5.00. Untested queens in section at 75 cents each. W. J. FOREHAND, Fort Deposit, Ala.

**FOR SALE.**—Superior honey queens, red-clover strain; untested, \$1.00; tested, \$1.25; select tested, \$1.50. Send for circular. VIRGIL SIRE & BRO., North Yakima, Wash.

**FOR SALE.**—100 colonies of pure Italian bees in eight and ten frame Dovetailed hives at \$6.00 each; in lots of ten, \$5.00 each. F. A. GRAY, Redwood Falls, Minn.

**FOR SALE.**—80 to 100 colonies of Italian bees. Send for price and description.

JOS. HANKE, Port Washington, Wisconsin.

Extra-fine queens of the red-clover strain, bred by the originator. Fine queens for breeders' use, a specialty.

F. J. WARDELL, Uhrichsville, Ohio.

**FOR SALE.**—Golden Italian queens, untested, 50 cts.; tested, \$1.00. Safe arrival. No discount on quantity.

D. T. GASTER, Rt. 2, Randleman, N. C.

**NOTICE.**—In writing me for prices on Italian queens and nuclei, note change in address. Queens and bees are ready to ship now. C. B. BANKSTON, Rockdale, Texas.

**POUND BEES,** nuclei, full colonies, from Mechanic Falls branch. Prices on application. MASON, Mechanic Falls, Me.

**FOR SALE.**—85 colonies Italian bees, Moore's strain; Langstroth frame. E. J. BERRY, Bromo, Quebec, Canada.

**FOR SALE.**—Tested Italian queens, \$1.00 each; colony, \$7.00. E. M. COLLYER, 75 Broadway, Ossining, N. Y.

**FOR SALE.**—Seven colonies bees in Root hives, \$3.00 each. J. W. GARRY, Millstone, Md.

**FOR SALE.**—Apiary near Annapolis, Md. A. DREVAR, Box 264.

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**FOR SALE.**—One Sprague damper and valve-regulator for regulating the temperature of your house; adapted for steam, hot water, furnace, natural gas, or stove. Manufacturer's price, \$30.00. I have one to spare at \$16.00, or will trade for honey or wax. A. L. BOYDEN, Medina, Ohio.

**FOR SALE.**—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars. THE PENN CO., successors to W. P. SMITH, Penn. Miss.

**FOR SALE.**—Why did you get so many stings in the face last season? Because you did not have on one of the Alexander wire bee-veils at 60 cts. each.

FRANK C. ALEXANDER, Delanson, N. Y.

**FOR SALE.**—Sweet-potato seed. Bright stock, yellow Jersey, packed fresh in storage-house on day of shipment. Sweet-potato and other plants in season. Send for free circular and price list. L. H. MAHAN, Terre Haute, Ind., Box 143.

**FOR SALE.**—About 1500 5-gallon honey-cans, with cases all in good condition, and were new when shipped to us. Make us an offer on cans with or without cases.

PERFECTION BISCUIT CO., Fort Wayne, Ind.

**FOR SALE.**—Second-hand Quinby hives for extracting, twelve frames wide, two tiers high; closed-end frames  $11\frac{1}{2}$  x  $17\frac{1}{2}$  in.; \$1.50 each, or \$50.00 for the lot. A. H. ROOT, Canastota, N. Y.

**FOR SALE.**—One two-horse-power gasoline-engine, nearly new, \$50.00; or will trade it for any thing that I can use in bee-supplies. M. A. JONES, Atwater, Ill.

**FOR SALE.**—Film Premo camera; used two seasons; Planatograph lens, auto shutter;  $3\frac{1}{4}$  x  $5\frac{1}{2}$ ; \$15.00 for a quick sale. Fine shape. WAKEFIELD WALKER, Medina, O.

**FOR SALE.**—24 lbs. sweet-clover seed, unhulled; 14 cents per lb. for the lot; 15 retail. Postage extra. A. MOTTAZ, Utica, Ill.

**FOR SALE.**—Sweet-clover seed, 15 cts. per pound, postage extra. Root's supplies. ANTON G. ANDERSON, Holden, Mo.

**FOR SALE.**—Danzenbaker comb-honey hives and other bee-supplies. Write for prices. ROBT. INGRAM, Sycamore, Pa.

**FOR SALE.**—Bee-supplies at factory prices. D. COOLEY, Kendall, Mich.

**FOR SALE** or exchange for bees, very fine thoroughbred Scotch collie, yearling, female. W. H. ROBINSON, Lafayette, Ind.

**FOR SALE.**—A quantity of chaff hives in good condition, cheap. W. E. HEAD, Paris, N. Y.

**HOUSE PLANS.**—Blue prints of 20 artistic homes for 25 cents. EHLERS & SON, Architects, Carthage, Mo.



## Poultry.

FOR SALE.—S. C. Brown Leghorns. Baby chicks, \$3.00 per 25; \$5.00 per 50, \$10.00 per 100. Bred for shape, color, and laying qualities. I guarantee safe arrival. H. M. MOYER, Rt. 2. Bechtelsville, Pa.

Williamson strain single-comb White Leghorns. First-prize winners at Richmond, Bristol, and wherever shown. Our champion hen Ivoret laid 239 eggs in one year. Eggs from select matings, \$2.00 per 15. Circular free.

WILLIAMSON FARMS, Mattoax, Va.

FOR SALE.—R. C. Brown Leghorn eggs, 75 cts. per 15; \$4.00 per 100; also purely mated Italian queens—great honey-gatherers. Untested, 60 cts. each. GEO. J. FRIESS, Route 6. Hudson, Mich.

Indian Runner duck eggs from prize-winners at \$1.00 per 12; \$4.00 per 55; \$6.50 per 100. Circular free. KENT JENNINGS, Mt. Gilead, Ohio.

GOLDEN BARRED ROCKS.—The new beauty and utility fowl. Plumage barred buff and white. Write for literature and a feather. L. E. ALTWEIN, St. Joseph, Mo.

S. C. W. Leghorns, bred for heavy egg production winter and summer. Lakewood-Blanchard strains. Great profit-payers. Selected eggs, \$1 per 15. W. I. HARRINGTON, Brunswick, O.

FOR SALE.—Eggs of R. C. Black Minorcas, R. C. R. I. Reds, and White Wyandottes; \$1.00 for 15; \$2.00 for 35. Rural Rt. JAMES STEWART, Franklin P'ce, O.

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc. STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

## Bee-keepers' Directory.

Bee-keepers' Supply Co., Lincoln, Neb.. We buy car lots of Root's goods. Save freight. Write.

Italian queens from direct imported mothers, red-clover strain, \$1.00. Circular. A. W. YATES, 3 Chapman St., Hartford, Ct.

Golden yellow Italian queens my specialty: 1909 price list ready. Safe introducing directions. E. E. LAWRENCE, Doniphan, Mo.

CARNIOLAN, BANAT, and CAUCASIAN queens. Order from original importer, FRANK BENTON, box 17, Washington, D. C.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Fairwell, Mich.

Golden and red-clover Italian queens. See my other adv't in this issue. WM. A. SHUFF, 4426 Osage Ave., Philadelphia.

For your address on a postal card I will send you valuable information pertaining to queen culture. Write to-day. J. E. HAND, Birmingham, O.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 75 cts.; select, \$1.00; tested, \$1.25 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd, Ky.

Quirin's famous improved Italian queens ready in April; nuclei and colonies about May 1. My stock is northern bred, and hardy. Five yards wintered on summer stands without a single loss in 1908; 22 years a breeder. For prices see large ad. in this issue. QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

## Convention Notices.

The spring meeting of the Middlesex Bee-keepers' Association will be held in the City Hall, London, Ont., on Saturday, May 1. The program includes a speaker from the Ontario Department of Agriculture. First session at 10 o'clock. Lambeth, Ont., April 5. E. J. BRAINARD, Sec.

*Continued from page 238.*

soared around beside her brother for seven minutes. Before she would venture, however, the Comtesse de Lambert went for a five-minute trip. Miss Wright made another voyage on the 23d.

Perhaps our readers may care to know that, when the Wright Brothers were making their first experiments out in that pasture-lot near Dayton, it was my privilege to take this same Miss Wright on a little trip around the lot with the little Olds mobile that is giving Mrs. Root and me so much enjoyment down here in Florida. At that early date I believe I had more faith in the ultimate outcome of their experiments than the old father, the sister, or even the two brothers themselves; and you can imagine, therefore, how it rejoices my heart to learn I was not far out of the way about it. Read the following:

Both Tissandier and Connt Lambert quickly picked up the knack of steering. For a few days they held the levers for the straight runs, and Wright manipulated the curves. Later Wright became the passenger throughout long runs. Tissandier says that driving is the most fascinating sport he has ever tried.

By the 16th, Orville was well enough to begin sleeping at the shed and to superintend the building of the new machine with which speed is to be obtained. Wilbur now describes his present machine as "a slow old thing suitable only for teaching."

On the 24th, Orville got into the air for the first time since his accident. With his sister he went up in the balloon Icarus with the Marquis de Kergarion.

In honor of their work for aviation both Wilbur and Orville have been made Doctors of Technical Science by the Technical High School of Munich.

Fifteen Wright aeroplanes have been sold during the month by M. Michel Clemenceau.

The popular fashion in Paris just now is the "Wright cap."

Bleriot has been dividing his time between watching Wilbur Wright and making skimming flights of about 600 meters in his small fast racer Bleriot XI.

# BEESWAX WANTED

WE are always in the market for beeswax, and will pay the best market price. We used last year in the manufacture of **Comb Foundation** over

## EIGHTY TONS

and are likely to need fully as much for this year's trade. Send your wax direct to us, being sure to pack it carefully for safe shipment, and mark it so we can easily tell who sends it. Write to us, at the same time sending a shipping receipt, and stating weight of shipment, both gross and net.

We are paying at this date for pure average beeswax delivered here, 29 cents per pound cash, or 31 cents in trade. On choice yellow wax we pay a premium of one to two cents a pound.

THE A. I. ROOT COMPANY, MEDINA, OHIO

## BOOK REVIEWS.

## OUR BIRD COMRADES.

This is a popular work on the subject of our more familiar birds. The language is of the simplest and most easily understood kind. The author is Mr. Leander S. Keyser, a well-known bird student, and author of "Birds of the Rockies," "Birddom," and "In Bird Land." The text is very strongly reinforced by some beautiful full-page color plates of birds. For an easy introduction to the study of American birds it can be highly endorsed. The print is large and clear, and is altogether creditable to the publishers, Rand & McNally, Chicago, Ill. One of the best chapters is that relating to the choice of books relative to the proper study of ornithology by those who desire to take up the science seriously, and also for those to whom bird-study is a pastime.

Price \$1.25, postpaid. We can supply it from this office if desired.

## SPECIAL NOTICES

## BY OUR BUSINESS MANAGER

Beginning early in May, we will have a large number of bees in our roof apiary at our Philadelphia store, No. 10 Vine Street, for the benefit of our customers, those who are anxious to study the habits of the bees, as well as classes in natural history or any others who may be interested. Our Mr. Wm. A. Selser will give a free demonstration and lecture on the management and habits of bees every Tuesday and Friday mornings from 11 to 12 o'clock during the months of May and June. These demonstrations are entirely free to the public or any one who desires to attend them. Veils will be furnished so that there will be no danger of any one getting stung. The increasing interest which was manifested in these demonstrations last year leads us to believe that large gatherings will attend this year, and you are cordially invited to be present with your friends.

## HIVE-SIDES OF TWO PIECES.

To continue making hives of pine practically clear of knots, in such quantities as the orders are demanding, we find ourselves obliged to resort to matching two pieces together to form enough wide stock for hive-bodies. The average width of shop pine has been growing narrower. Fifteen years ago there were wide boards enough to make covers and bottoms of one-piece boards, and some supers were made by ripping ten-inch boards in two. Now the lumber does not furnish enough boards ten in. and over to make sufficient hive-bodies—the covers, bottoms, supers, and Danz. hives and divisible-brood-chamber hives all being made of the narrower stock. It is recognized by manufacturers of furniture and other products requiring wide stock that a board built up of narrower pieces is stronger, and holds its shape without warping, much better than a one-piece board. It is more work to make the boards of more than one piece; but when we can not find enough wide boards, we must perform the extra labor to make them.

## BUSINESS OUTLOOK.

Orders continue to arrive in such volume that we scarcely hold our own. We are about a month behind on carload orders, and about two weeks behind on local orders. It is in our wood-working department that we are crowded most. We are in excellent shape on honey-extractors, smokers, and all metal goods. We have a reserve stock here of over 150 honey-extractors, including a number of power extractors, 4, 6, and 8 frame, and engines to run them. Orders exclusively for goods of which we have a good stock are started on their way without unnecessary delay, while orders for hives and other wood goods must take their turn. We are now running our factory fifteen hours a week overtime, turning out additional goods for orders and turning away orders for boxes and other outside products from regular customers so as to interfere as little as possible with our regular work in bee-hives and supplies.

## CRANE SHIPPING-CASE—PATENT FENCING.

In another part of this issue will be found illustrations and description of shipping-cases for comb honey made of double-faced corrugated material, each section in a compartment by itself. The weight of such a case is about half that of wood, yet it is very much stronger. We are prepared to offer such cases in lots of 100 or over for ten per cent advance over the price of wood cases without glass. They are made to hold 24 sections of any of the regular sizes; but you must specify the size and width of section for which you want them made. We do not have them in stock yet, so can not furnish samples or small lots, but will ship direct from the factory in Sandusky, Ohio, till further notice. A less number than 100 will be furnished if you pay an operating charge of \$1.00 on each lot ordered. Unless otherwise specified they come all assembled. For long-distance shipments it may be better to send them K. D., but all creased and with adhesive tape to secure the corners. One hundred cases weigh about 200 lbs.

# PUBLICATIONS ON BEE CULTURE

Please use this order form by checking in the margin the items wanted

The pamphlets and booklets listed below are of more than ordinary interest:

- ☐ **My First Season's Experience with the Honey-bee.** By the "Spectator," of the *Outlook*, of New York. A ten-page leaflet detailing the experiences of this well-known writer. You will read the leaflet through before you lay it down. Free.
- ☐ **The Bee-keeper and Fruit-grower.** A 15-page booklet giving actual facts regarding the value of bees to fruit, and showing how bee-keeping may be doubly profitable to the fruit-grower. Fruit-growers are realizing as never before the necessity of having honey-bees in close proximity to their blossoming fruit. Free.
- ☐ **Bee-keeping for Sedentary Folk.** A 24-page leaflet reciting the actual experiences of an amateur bee-keeper, showing what equipment is best, points derived, etc. Free.
- ☐ **Catalog of Bee-keepers' Supplies.** Our complete catalog will be mailed free to any address on request.
- ☐ **Transferring Bees.** A 14-page booklet giving instructions and illustrating appliances. No need to keep your bees in old out-of-date hives when they can easily be transferred into new hives and earn profits for you. Price 10 cts.
- ☐ **Bee-hunting.** Gives information necessary to enable one who is active and intelligent to engage in bee-hunting with success. It is well gotten up and worth the price, which is 25 cents.
- ☐ **Spring Management of Bees.** A 14-page booklet detailing the experiences of some successful bee-keepers, and giving instructions on this oftentimes perplexing matter. Price 10 cts.
- ☐ **Habits of the Honey-bee.** By Dr. E. F. Phillips. A somewhat scientific handling of the habits and anatomy of the bee. Price 10 cents.
- ☐ **How to Keep Bees.** A book of 228 pages, detailing in a most interesting manner the experiences of a beginner in such a way as to help other beginners. Price \$1.10 postpaid.
- ☐ **The A B C of Bee Culture.** A complete encyclopedia on bees, of nearly 540 pages, fully illustrated. \$1.50 postpaid; half leather, \$2.00.
- ☐ **Gleanings in Bee Culture.** A 64-page illustrated semi-monthly magazine, the leading exponent of bee culture in this country. Ten cents per issue, but to new subscribers we will furnish it six months for 25 cents.

This sheet may be used as an order sheet by properly checking on the margin your signature, and remittance, if required.

The A. I. Root Co., Medina, O.:  
Please send me the items checked above;  
I inclose \$. . . . . to cover the cost.

Name.....

Street Address or R. F. D.....

Town.....

G.B.C. 4-15

State.....



# The Biggest Bargain of the Spring

Your own renewal to Gleanings in Bee Culture

for one year from present expiration . . . . . **\$1.00**

One new subscription to Gleanings in Bee Culture

from May to December, inclusive . . . . . **.75**

Your own subscription to Suburban Life

from May to December, inclusive . . . . . **2.00**

---

**\$3.75**

**ALL THREE  
only \$1.75**

(We have purposely arranged so that your subscription to Suburban Life will expire when the renewal offers are most liberal.)

SUBURBAN LIFE tells people how to get more real enjoyment out of life—how to grow flowers and vegetables—how to build new homes and make over old ones—how to get the most fun out of outdoor sports and vacation trips—what to do in the evenings at home. SUBURBAN LIFE is practical and beautiful, first, last, and all the time. It costs three dollars a year and is worth the money.

**THE  
A. I. ROOT CO.  
MEDINA, O.**

**Gleanings in Bee Culture, Medina, Ohio.**  
Enclosed find \$1.75. Renew Gleanings in Bee Culture for one year, and send eight months of Suburban Life to

**My Name** .....

**My Address** .....

Also send eight months of Gleanings in Bee Culture, beginning with May, to

**New Name** .....

**New Address** .....

G. B. C.  
G. 4-15

## DADANT'S FOUNDATION

DADANT'S FOUNDATION

DADANT'S FOUNDATION

## It Excels

## WHAT'S IN A NAME?

That depends on whose name it is. It depends upon what the name represents. It depends upon the quality of the goods the name represents. It is NOT the name that makes DADANT'S FOUNDATION so well known and well liked, but it is the **Quality of the Goods**. That's what backs up the name, and the QUALITY is backed by thirty years of successful experience in foundation-making.

**EVERY INCH** of DADANT'S FOUNDATION is equal to the best inch we can make. Do not fail to insist on Dadant's make when you order your foundation. Accept no substitute, even though the dealer claims his foundation is made by the same process.

It is the **PURIFYING PROCESS** that counts. Our method of purifying has been unequalled for years. This method leaves every essential in the pure beeswax, and our foundation does not have the odor of wax cleansed with acids.

That is why several large honey-producers who have tested our foundation side by side with other makes, have found ours to be the best, and the best liked by the bees.

## Beeswax

Do not sell your beeswax until you get our quotations. We have received, up to April 1, over 80,000 pounds of beeswax for our 1909 trade. We will need over 80,000 pounds more before January 1, 1910. Drop us a card and get our prices.

Agents for DADANT'S FOUNDATION in every part of the United States.

**Dadant & Sons, Hamilton, Illinois**

DADANT'S FOUNDATION

The LATEST and BEST HONEY-JAR  
MADE.

## Greatest Fruit-Jar on Market

**Special Features:** All glass, mouth  $3\frac{1}{4}$  in. diameter, and absolutely sanitary.



*Officers National Bee-keepers' Association say:*

TO WHOM IT MAY CONCERN:

FREMONT, MICH., Nov. 12, 1908.

This is to certify that I have personally examined the Premium jar, and believe it to be the most practical jar for the bee-keeper to use in marketing his extracted honey, and I gladly recommend all bee-keepers to give it a thorough test.

(Signed) GEO. E. HILTON, Pres. N. B. Assn.  
W. Z. HUTCHINSON, Sec. N. B. Assn.

Eastern Distributor of honey-jar:  
**THE A. I. ROOT CO., Medina, Ohio.**

Premium Fruit-Jar sold by all good jobbers.

Manufactured solely by  
**Premium Glass Co.,**  
Coffeyville, Kansas.



# HAVE YOU CONFIDENCE IN THE EDITOR OF "GLEANINGS IN BEE CULTURE"?

Of course you have. For E. R. Root, editor of GLEANINGS IN BEE CULTURE, not only holds the key to over thirty-five thousand homes, but to the hearts of his readers as well.

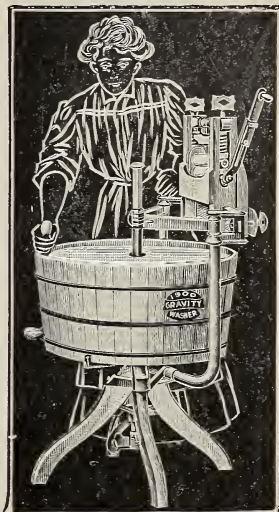
The fact that you have such a high regard for the editor of your favorite paper is all the more reason why you will be doubly interested in a letter we recently received from Medina. Mr. Root himself says that the helpfulness and good cheer that radiate from the pages of GLEANINGS IN BEE CULTURE have much of their inspiration from his home.

Here is the letter, word for word, just as we received it.

The domestic-help problem is a serious one at Medina. Girls are very scarce, and Mrs. Root and I decided we would have to put in some mechanical helps that would do our washing, ironing, and sweeping. In looking around for a mechanical automatic washer to be operated by electricity, we finally settled upon the Nineteen Hundred machine equipped with an electric motor. This was sent to us on thirty days' trial; and so pleased was Mrs. Root with it that I sent on a check to pay for it before the time limit was up. Mrs. Root is rather exacting, but she says this machine does the washing properly, and without tearing the clothes. She puts our washing into the machine before breakfast, turns the switch to the electric motor, and goes off and leaves it, to get breakfast. She shortly returns, runs the clothes through the wringer, which is also operated by the electric motor, puts in another batch of clothes, and turns on the switch and lets the thing "chug," "chug" away, when the operation is repeated. It gives me, therefore, great pleasure to say a good word in favor of this machine, for it will do all that is claimed for it.

We also use very satisfactorily an electric iron and an electric mangle, and a part of the time an electric sweeper. If we only had an electric dish-washer we could get along very nicely without any help in the house.

E. R. ROOT,  
Editor of GLEANINGS IN BEE CULTURE.



## Watch the Woman!

Do you think she is really working? Not a bit of it! Yet she is doing a big week's washing. The **real work** is done by the 1900 Gravity Washer, which makes most of its own motion. The thing that helps to make it go is under the tub.

If women knew what a wonderful help the 1900 Gravity Washer is, not one would be without it. It saves work and worry and doctor's bills. Takes away all the dread and drudgery of wash day. It saves soap, saves wear and tear on the clothes. Never breaks buttons or injures the most delicate fabrics. It certainly does beautiful work.

## Send no Money! The Washer Pays for Itself

We ask no cash in advance—no deposit—no notes. The trial is absolutely free. If you keep it, simply pay us a little each week or each month, out of what it saves for you.

If, after a full month's free trial, you decide not to keep it, simply notify us to send for it. We will take it back without a word of complaint. The trial will not cost you a penny and will not place you under the slightest obligation.

## How to Wash Without Work

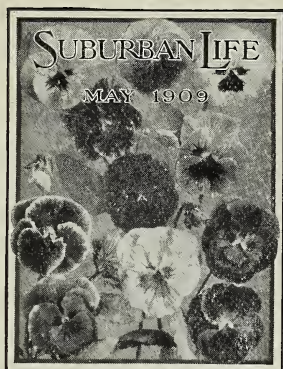
Write for Free Book about the Wonderful Washer that Almost Runs Itself

This washer has a whirling motion and moves up and down as it whirls. No paddles or machinery inside. Yet it takes the dirt out so quickly that a tubful is washed in **six minutes!** Washes any thing, from rugs to daintiest laces. Does it better than is done **by hand** or with any other washer. And actually pays for itself.

Women who have used the washboard all their lives just rub their eyes in amazement the first time they see a 1900 Washer at work. They exclaim—"Can it be true that it washes clothes **clean in six minutes!**" They take out the clothes when the six minutes are up, and sure enough—**they're white and clean.** You just ought to write and get one on free trial, so you can see for yourself.

## Four Weeks' Washings Done FREE! Washers Shipped Everywhere on Trial

We pay the freight. We give you a genuine free trial. We don't ask for cash or notes. You get the Gravity Washer just by asking for it. An entire month's use of it (four weekly washings) FREE. This free trial will tell you more than we could in a page of this paper. How it saves backache and amache and perspiring over a steaming tub, rubbing the skin off your fingers. Thousands of women are now using the 1900 Gravity Washer. They tried it first—at our risk. We simply sent the washer and let it **sell itself.** Send for the beautiful free book, "**Washing a Tubful in 6 Minutes.**" This story of the 1900 Washer is of fascinating interest. You should read it. Address The 1900 Washer Co., 221 Henry St., Binghamton, N. Y. Or, if you live in Canada, send to The Canadian 1900 Washer Co., 355 Yonge St., Toronto, Can.



# The Flowers of Spring

are faithfully portrayed in

## SUBURBAN LIFE

If you are very, very anxious to improve your home surroundings you should subscribe for *Suburban Life*. It shows what others have done and are doing to make their homes truly beautiful by laying out

### Tasteful Gardens and Beautiful Lawns

No long-drawn-out descriptions are necessary, because the beautifully artistic illustrations tell almost the whole story. They give the home-makers inspiration and lofty ideals. We give every one a chance—the man who owns a \$1000 place as well as the one with the \$25,000 mansion. If you read *Suburban Life* regularly it will not be long before you see a plan just suited to your place and your means.

In planting out and improving a home acre you will save many times the cost of a subscription from the many practical hints given in its pages, from time to time.

Bee-keepers are invited to subscribe. Nothing could be more beautiful and interesting than an apiary artistically laid out on a modern lawn, surrounded with appropriate flowers, fine shrubs, and handsome trees. Try it.

In every town and village thousands of dollars are wasted on improper shrubs and trees poorly set out. We aim to prevent this and teach our readers how to get artistic results. Thousands say we succeed. The fact that you have *Suburban Life* on your table shows you appreciate a beautiful home, and intend to have one.

Subscription \$3.00 a year, and worth it. We are very anxious to give every one his money's worth, and aim to help all our subscribers. We live to serve them.

**Suburban Life, 44 East 23d St., New York City**